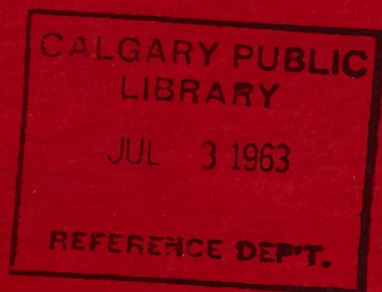


Alberta (Calgary)

Dup

UAC

University of Alberta, Calgary



ARTS AND SCIENCE

AGRICULTURE, First Year

COMMERCE

DENTISTRY, Prerequisite Year

EDUCATION

ENGINEERING, First and Second Years

HOUSEHOLD ECONOMICS, First Year

LAW, Prerequisite Years

MEDICINE, Prerequisite Years

NURSING, First Year

PHYSICAL EDUCATION

GRADUATE STUDIES

CALENDAR
1963 - 64

UNIVERSITY OF ALBERTA, CALGARY

REGISTRATION

1963 - 64

Wednesday, August 14

Last day for receiving applications for admission from new students, or for transfer from one campus of the University to the other.

Saturday, August 31

Last day for registration in the Evening Credit Program.

Monday, September 23

9:00 a.m. First Year Registration:

Faculties of Arts and Science, Commerce, Education and Physical Education. Surnames A to M. Physical Education Building.

Faculty of Engineering. Room 104 (Amphitheatre), Science and Engineering Building.

B.Ed. Program for Holders of Approved Degrees. Room 231/233 (Student Teaching office) Arts and Education Building. See also Thursday, September 26.

1:30 p.m. First Year Registration:

Faculties of Arts and Science, Commerce, Education and Physical Education. Surnames N to Z. Physical Education Building.

Tuesday, September 24

9:00 a.m. Second Year Registration. All faculties. Locations as above. Students who register for Ed. CI 300 will also register at the Student Teaching desk.

1:30 p.m. Third and Fourth Year Registration. All faculties. Locations as above. Students who register for Ed. CI 300 or Ed. CI 400 will also register at the Student Teaching desk.

Wednesday, September 25

8:00 a.m. First Year Tests. All women students. Physical Education Building.

1:00 p.m. First Year Tests. All men students. Physical Education Building.

4:00-6:00 p.m. Part-time and Special Students Registration. Physical Education Building.

Thursday, September 26

9:00 a.m. Registration in B.Ed. Programs for Holders of Approved Degrees. Room 223-229, Arts and Education Building. Registration in shop courses for Industrial Arts students. Southern Alberta Institute of Technology.

2:30 p.m. Admission Ceremony. All students, all years, all faculties. Southern Alberta Jubilee Auditorium. Public invited.

Friday, September 27

Lectures begin for all students.

Monday, September 30

Student Teaching Registration for students already holding a certificate. Room 231, Arts and Education Building.

ADMISSION

All First Year students and students in B.Ed. Program for Holders of Approved Degrees must present an Admission Card from the Registrar's Office when appearing for registration.

All Second, Third and Fourth Year Arts and Science students must present a schedule of courses approved by their Faculty Office when appearing for registration.

FEES

Fees must be paid by October 15 or a late payment penalty will be imposed. Students are advised to use cheques made payable to the University of Alberta rather than cash for payment of fees.

To avoid delay students may place cheques with fee card stubs attached in a deposit box outside the General Office in the Arts and Education Building. Cash payments, however, must be made to the Cashier in the General Office.

ADMISSION CEREMONY

New students will be formally admitted to the University of Alberta, Calgary, at 2:30 p.m. on Thursday, September 26 in the Southern Alberta Jubilee Auditorium. All students are expected to attend.

PSYCHOLOGICAL TESTING

Tests will be conducted in the Physical Education Building on Wednesday, September 25, for all First Year students.

CLASS CARDS

Class cards are required for admission to the first lecture of each course in which a student is registered, and must be given to the instructor at that time. These cards are issued to the student on registration and must conform with the courses entered on the student's permanent record.

CHANGES IN PROGRAM

Changes made in the subjects of a program after registration is completed must be approved by the Dean of the Faculty concerned before Wednesday, October 9.

LIBRARY INSTRUCTION

The Library staff will provide instruction in the use of the library during the week of September 23 to September 27. Details will be announced separately.

CALGARY ADDRESSES

Students who register without a Calgary address are required to report to the General Office, Arts and Education Building, as soon as accommodation is found.

AUTOMOBILES

Students must register any automobile that will be brought on the campus. A date by which such registration must be completed will be announced. A driver's license, a pink card as proof of financial responsibility, and a fee card stub are required to register. Failure to observe this regulation will make the student liable to a \$25 fine.

UAC

University of Alberta, Calgary

ARTS AND SCIENCE

AGRICULTURE, First Year

COMMERCE

DENTISTRY, Prerequisite Year

EDUCATION

ENGINEERING, First and Second Years

HOUSEHOLD ECONOMICS, First Year

LAW, Prerequisite Years

MEDICINE, Prerequisite Years

NURSING, First Year

PHYSICAL EDUCATION

GRADUATE STUDIES

CALENDAR

1963 - 64

As this calendar is published a considerable time before the opening of the Session, the University reserves the right to make whatever changes circumstances may require, including the cancellation of particular courses.

All general enquiries should be addressed to the Registrar's Office, University of Alberta, Calgary.

June, 1963

PART I

General

OFFICE HOURS

Monday through Friday

—8:30 a.m. to 12:00 noon
1:00 p.m. to 4:30 p.m.

Saturday

—Closed

UNIVERSITY OF ALBERTA
Edmonton and Calgary

ACADEMIC SCHEDULE
1963-64

During the Academic Year (July 1 to June 30) the University of Alberta conducts a Summer Session of six weeks' duration and a Winter Session of twenty-eight weeks' duration. In the Faculties of Medicine and Dentistry in Edmonton, the Winter Session is thirty-two weeks.

1963

July

- Monday, 1 — Fifty-seventh University year begins.
- Tuesday, 2 — Confirmation of registration of Summer Session students.
- Wednesday, 3 — Summer Session lectures begin.
- Wednesday, 10 — Last day for payment of 1963 Summer Session fees.
- Monday, 15 — Last day for application for Graduate degrees to be conferred at Fall Convocation.

August

- Thursday, 1 — Last day for students with unsatisfactory university records to notify the Student Counselling Services that they are seeking re-admission.
- Thursday, 1 — Last day for receiving applications for supplementals in Medicine and Dentistry.
- Tuesday, 13 — Last day for receiving applications for September supplementals.
- Wednesday, 14 — Last day for receiving formal applications for admission except in M.D. (April 1), D.D.S. (May 15) and Graduate programs (August 31). Last day, also, for receiving formal applications for transfer from one campus of the University to the other.
- Thursday, 15 — Summer Session ends.
- Monday, 19 — Supplemental examinations begin in Medicine and Dentistry.
- Saturday, 31 — Last day for receiving registrations in the Evening Credit Program (including students in the Faculty of Graduate Studies). Applications for admission from new students must have been received by August 14.

September

- Monday, 2 — Labor Day; University buildings closed.
- Tuesday, 3 — 9:00 a.m.—Registration of all students in the M.D. program;
2:00 p.m.—Registration of all students in the D.D.S. program.
- Tuesday, 3 — Supplemental examinations begin except in Medicine and Dentistry (see August 19).
- Wednesday, 4 — 8:00 a.m.—Lectures begin in second, third and fourth years in faculties of Dentistry and Medicine.
- Wednesday, 4 and Thursday, 5 — Orientation exercises for first year Medical and Dental students.
- Thursday, 5 — 9:00 a.m.—Registration of students in Dental Auxiliary program.

ACADEMIC SCHEDULE

September

- Friday, 6 — Lectures begin in first year in faculties of Dentistry and Medicine, and in the Dental Auxiliary program.
- Monday, 16 — Registration of students in the Faculty of Law. Last day for filing by M.D. and D.D.S. students of applications for grants and loans under Students' Assistance Act.
- Monday, 16, to Saturday, 21 — Registration of Graduate Students, except those in Evening Credit Program (see September 10).
- Tuesday, 17 — 8:00 a.m.—Lectures begin in the Faculty of Law.
- Tuesday, 17 — 9:00 a.m.—Registration of fourth year Engineering students who are taking the pre-session course in Programming Engineering Problems for Computers.
- Tuesday, 17 to Thursday, 26 — Pre-session course in programming Engineering Problems for Computers.
- Saturday, 21 — (afternoon) — Special Medical Convocation to commemorate the fiftieth anniversary of medical education at the University.
- Monday, 23 — Last day for submission of theses by graduate students expecting to receive their degrees at Fall Convocation.
- Monday, 23 to Thursday, 26 — Registration of all students in Agriculture, Arts and Science, Commerce, Education, Engineering, Household Economics, Medical Laboratory Science, Nursing, Pharmacy, Physical Education, and Physical and Occupational Therapy, according to published schedule.
- Friday, 27 — Regular lectures begin for all students registering in previous four days. First day of registration of B.D. students.
- Saturday, 28 — Special supplemental examinations.
- Monday, 30 — Evening Credit Program classes begin.

October

- Tuesday, 1 — Last day for filing by other than M.D. and D.D.S. students of applications under the Students' Assistance Act.
- Wednesday, 9 — Last day for changes in registration.
- Thursday, 10 — Last day for oral examinations of Masters and Doctoral candidates for Fall Convocation.
- Saturday, 12 — Last day for registration of B.D. students.
- Monday, 14 — Thanksgiving Day; University Buildings closed.
- Tuesday, 15 — Last day for payment of undergraduate fees.

November

- Saturday, 2 — Notice of intention to be absent from Fall Convocation must be given by 12:00 noon.
- Saturday, 9 — (afternoon) — Fall Convocation (to be held in Calgary).
- Monday, 11 to Saturday, 16 — Test week*.
- Monday, 11 — Remembrance Day. No classes will be held between 10:00 a.m. and 12:00 noon.

December

- Monday, 16 — Last day for receipt of applications for Certificates of Post-Graduate Qualification in Medicine.
 Saturday, 21 — Last day of lectures before Christmas vacation.
 Sunday, 22 — Christmas vacation begins.

1964

January

- Sunday, 5 — Christmas vacation ends.
 Monday, 6 — First term lectures resume.
 Last day for filing second term applications for grants and loans under the Students' Assistance Act.
 Saturday, 11 — Last day of lectures in the first term except in the D.D.S., LL.B. and M.D. programs.
 Monday, 13 to Saturday, 18 — Mid-session examinations, except in the D.D.S., the LL.B. and the M.D. programs.*
 Wednesday, 15 — Last day for payment of second instalment of fees.
 Monday, 20 — Second term lectures begin.

February

- Friday, 7 — Last day for application for Graduate Degrees to be conferred at Spring Convocation.

March

- Monday, 2 to Saturday, 7 — Test Week.*
 Friday, 27 — Good Friday; University buildings closed.
 Monday, 30 — Last day for receiving applications for supplemental examinations to be written in April.

April

- Wednesday, 1 — Last day for receipt of applications for admission from new students undergraduate or graduate, who wish to enter the University in the 1964 Summer Session.
 Saturday, 4 — Last day of lectures in fourth year Dentistry.
 Monday, 6 — Clinical period begins in fourth year Dentistry.
 Friday, 17 — Last day for submissions by graduate students of theses.
 Saturday, 18 — Last day of lectures for students in Arts and Science, Commerce, Household Economics, Agriculture, Education, Engineering, Medical Laboratory Science, Nursing, Pharmacy, Physical Education, and Physical and Occupational Therapy.
 Monday, 20 — Final examinations begin for students in the School of Nursing except first year B.Sc.
 Tuesday, 21 — Final examinations begin for students mentioned under April 18.
 Monday, 27 — Field experience begins for students in the School of Nursing except first year B.Sc.
 Tuesday, 28 — Survey School begins for first year Engineers.
 Thursday, 30 — Last day for registration of students in the Summer Session.

ACADEMIC SCHEDULE

May

- Friday, 1 — Last day for oral examinations for Masters and Doctoral candidates.
- Saturday, 2 — Last day of lectures in Medicine and first, second and third years of Dentistry. Clinical period ends in fourth year Dentistry.
- Monday, 4 — Final examinations begin in Dentistry and Medicine.
- Tuesday, 5 — First and second year Medical Laboratory Science students begin eighteen week period of hospital training. Outdoor School begins for second year B.P.E. students.
- Saturday, 9 — Charter Day.
- Monday, 11 — Four months period of Hospital Practice for School of Physical and Occupational Therapy begins.
- Wednesday, 13 — Notice of intention to be absent from Convocation must be given by 12:00 noon.
- Friday, 15 — Last day for receiving applications for admission to Dentistry.
- Sunday, 17 — Outdoor School ends for second year B.P.E. students.
- Thursday, 21 — Survey School ends.
- Friday, 29 — Convocation for the conferring of degrees and diplomas, except in Dentistry, Medicine, Nursing, Pharmacy and Physical and Occupational Therapy.

June

- Wednesday, 3 — Convocation for the conferring of degrees and diplomas in Dentistry, Medicine, Nursing, Pharmacy and Physical and Occupational Therapy.
- Thursday, 5 — Last day for payment of 1964 Summer Session fees without penalty.
- Tuesday, 30 — Fifty-seventh University year ends.

* Students will not be granted permission to leave the campus for extra-curricular activities during test weeks.

UNIVERSITY OF ALBERTA

EDMONTON AND CALGARY

The University is a co-educational, non-denominational, publicly-supported institution possessing the sole right of conferring degrees, other than degrees in Divinity, within the Province of Alberta.

It is a member of the Association of Universities of the British Commonwealth, of the National Conference of Canadian Universities and Colleges, and of the International Association of Universities.

History

Instruction at the University of Alberta began in Edmonton in 1908, in what is now the Faculty of Arts and Science. Teaching in other fields was established as follows: 1912—Law; 1913—Medicine and Engineering; 1918—Household Economics; 1924—Nursing and Education; 1928—Commerce; 1950—Physical Education; 1954—Physiotherapy; 1960—Occupational Therapy; 1950—Graduate Studies. The Department of Extension was established in 1912, and the Banff School of Fine Arts in 1933.

University classes began in Calgary in 1946 in the Faculty of Education, and the first year of Arts and Science was provided in 1951. In 1960 the University in Calgary was moved to a new 300-acre campus.

Instruction

The courses of instruction at the University of Alberta, Calgary, now lead to the following degrees:

Faculty of Arts and Science: All three years of the Bachelor of Arts (B.A.) and Bachelor of Science (B.Sc.) General degrees, of the Bachelor of Music in Performance (B.Mus.), and from one to four years of the B.A. and B.Sc. Honors degrees are available depending upon the department.

Faculty of Education: All four years of the Bachelor of Education (B.Ed.) and Bachelor of Education in Industrial Arts degrees are available.

Faculty of Commerce: The first two years of the Bachelor of Commerce (B.Comm.) degree are now available, and students admitted in 1963 can expect to complete the four year program in Calgary.

Faculty of Engineering: The first two years of the Bachelor of Science in Engineering (B.Sc.) degree are available.

School of Physical Education: The first two years of the Bachelor of Physical Education (B.P.E.) degree are available, and students entering in 1963 can expect to complete the full program in Calgary.

Faculty of Agriculture, School of Household Economics, and School of Nursing: First year work is available.

Faculty of Graduate Studies: Both Master of Arts (M.A.) and Doctor of Philosophy (Ph.D.) programs are available at the University of Alberta, Calgary, depending upon the department.

Prerequisites for Professional Schools

The University of Alberta, Calgary, offers in the Faculty of Arts and Science the opportunity to complete the necessary prerequisites for admission to the Faculty of Medicine, the Faculty of Dentistry, and the Faculty of Law.

Students who are candidates for these Faculties, and who can satisfy the academic requirements, may seek admission to Dentistry at the end of their first undergraduate year, and to Medicine and Law at the end of their second undergraduate year.

Certain first-year Arts and Science courses are also acceptable by pre-arrangement for credit at the School of Architecture, University of British Columbia, and at the Ontario Veterinary College for credit in Veterinary Medicine.

Summer Session and Evening Credit Program

Evening Credit Program — Through its Evening Credit Program, the University offers credit courses at various centres in the evening and on Saturdays for the convenience of persons employed during the day. For details of the courses, fees, and regulations, see the Evening Credit Program Announcement, University of Alberta, Calgary.

Summer Session—The University has conducted a Summer Session since 1919. Established primarily to meet the needs of teachers, the Summer Session provides a variety of courses for the convenience of candidates for various degrees who are unable to attend the regular sessions. For details of courses, fees, and regulations, see the Summer Session Announcement, University of Alberta, Calgary.

Extracurricular Activities

The University encourages reasonable participation by its students in a diversified group of athletic and other social activities. The University believes that these activities can be a rewarding extension of a student's education.

Among the interests represented in student organizations on the U.A.C. campus are newspaper and yearbook publication, dramatics, music, debating, politics, religion, radio, Armed Forces Officer training, and others.

Student publications are the *Gauntlet*, a weekly newspaper, and the *Tally-Stick*, the University yearbook. These are administered by the Students' Council, the elected executive committee of the student body.

Faculty

The full-time instructional staff at the University of Alberta, Calgary, will total approximately 160 men and women during the 1963-64 session.

Plant and Equipment

The 300-acre campus of the University of Alberta, Calgary, is located on the Banff Highway in the northwest corner of the city.

The physical plant consists of an Arts and Education building, a Science and Engineering building, both opened in 1960; a Physical Education building, opened in 1962, and a Library building to be opened in September, 1963.

It is expected that construction will begin on an extension to the present Science and Engineering building, and on a separate Engineering building, both in 1963.

An additional teaching building, residences, and a food service building are now in the preliminary planning stage.

The Performing Arts

The Southern Alberta Jubilee Auditorium, located within a short distance of the campus, provides excellent facilities for drama, music, exhibitions, films, lectures, and social events.

The Allied Arts Centre in downtown Calgary also offers a broad range of cultural activities.

Campus Visits

Personal interviews with admission officers are not required. Guided tours of the University of Alberta, Calgary, campus may be arranged by appointment during July and August. These are conducted in the late morning and again in mid-afternoon, Monday through Friday. All enquiries should be addressed to the Registrar's Office.

UNIVERSITY OF ALBERTA
EDMONTON AND CALGARY
OUTLINE OF PROGRAMS

Faculty or School	Degree or Diploma	Years required (after senior matriculation unless otherwise shown) to complete course	Years of Course Offered	
			Edmonton	Calgary
Arts and Science -----	B.A.	3	all	all
	B.Sc.	3	"	"
	B.Mus.	3	"	"
	B.A. Honors	4	"	2*
	B.Sc. Honors	4	"	2*
Commerce -----	B.Com.	4	"	2
Household Economics ----	B.Sc.	3	"	1
Agriculture -----	B.Sc.	4 (see matriculation requirements)	"	1
Engineering (Civil, Chemical, Electrical, Mechanical, Metallurgical, Mining, Eng. Physics) --	B.Sc.	4	"	1, 2
Dentistry -----	D.D.S.	4 (after pre-Dental year)	"	pre-Dental only
	Dental Aux. Diploma	2	"	0
Education -----	B.Ed.	4	"	all
	B.Ed. in Industrial Arts	4	4th year only	all
Law -----	LL.B.	3 (after B.A.)	all	0
(with Arts and Sci.) ----	B.A., LL.B.	5	"	1, 2
Medicine -----	M.D.	4 (after 2 pre-Medical years)	"	pre-Medical only
	B.Sc.	1 (see Medical calendar)	"	0

OUTLINE OF PROGRAMS

	B.Sc. in Med. Laboratory Sci.	3	all	0
Nursing -----	B.Sc. Dip. Public Health	5 1 (after hospital grad.)	"	1 0
	Diploma Teaching- Supervision	1 (after hospital grad.)	"	0
Physical Therapy ----- and	Diploma	3	"	0
Occupational Therapy ----	Diploma	3	"	0
Pharmacy -----	B.Sc.	3	"	0
	B.Sc. Honors	4	"	0
Physical Education -----	B.P.E.	3	"	2
Graduate Studies -----	M.A., M.Ed., M.Sc., Ph.D., Ed.D.	see Graduate Studies Calendar	"	depends on field of study
Committee on degree of Bachelor of Divinity ----	B.D.	See Arts and Sci. Calendar	"	0

* As the number of years offered varies, the department should be consulted.

UNIVERSITY OF ALBERTA, CALGARY

GENERAL ADMISSION REQUIREMENTS

An Alberta High School Diploma is normally required.

A student from another province in Canada who has obtained clear senior matriculation for the university or universities of that Province will be admitted to the University of Alberta with clear matriculation subject to the requirements for the first year courses in each program. Students who do not have clear matriculation on this basis will be required to complete full Alberta matriculation of the Faculty to which admission is sought.

Further details may be found in the faculty sections of the calendar.

The minimum acceptable course mark is 50%: the minimum acceptable average is 60%.* In the past the University has accepted any average from 59.5% to 59.9% as meeting the 60% average requirement. Beginning September, 1963, an average of at least 60.0% will be required.

These general regulations notwithstanding, the University may in its discretion refuse admission to any applicant. For example, this regulation normally will be applied in cases where applicants have written an inordinate number of examinations in order to attain nominal entrance requirements of the University.

*Mathematics 31 mark not counted in computing required average unless the departmental examination was written in 1962 or subsequently.

UNIVERSITY OF ALBERTA
Edmonton and Calgary

GENERAL ADMISSION REQUIREMENTS

FACULTY OR SCHOOL	PROGRAM	SUBJECTS OF ALBERTA Grade XII (Senior Matriculation) REQUIRED FOR ADMISSION (with average of at least 60%)								REMARKS
		English 30	Social Studies 30	Math. 30	Math. 31	Chem. 30	Physics 30	Biol. 32	French 30 German 30 Latin 30	
Arts and Science	B.A., LL.B. B.Mus. B.F.A.	C C C	C C C	C C C		C C C	C C C	C C C	CO CO CO	4 compulsory; 2 options. Either two sciences or two languages are required. For B.Mus. Matriculants must also have completed Western Board of Music Grade VIII Practical and Grades IV and V Theoretical examinations.
	B.Sc. (Biological) B.Sc. (Physical) Pre-Dentistry	C C C	C C C	C C C	C	C C C	C C C	C C	C C C	4 compulsory; 2 options. 5 compulsory; 2 options (Chemistry 30 and Physics 30 are required for the patterns Chemistry, Geology and Physics, and recommended for the others). 6 compulsory.

Agriculture	B.Sc.	C	C	C		C	O	O	O	4 compulsory, 2 options (Physics recommended). Admission will also be granted on basis of Diploma from Provincial School of Agriculture provided applicant possesses certain Grade XI and XII credits.
Commerce	B.Com.	C	C	C		O	O	O	O	3 compulsory: 3 options.
Education	B.Ed.	C	C	O		O	O	O	O O O	2 compulsory: 4 options. Mathematics 31 is acceptable only if taken in 1961-62 or subsequently. Music 30 is acceptable as one of the options. Detailed requirements for specialization: See Faculty of Education—Admission, and Faculty of Education — Majors.
Engineering	B.Sc.	C	C	C	C	C	C		C	7 compulsory. Students presenting Chemistry 30 without approved laboratory will have to satisfy the Department of Chemistry as to their proficiency.
Household Economics	B.Sc.	C	C	C		C	O	O	C	5 compulsory: 1 option (Physics is recommended).
Nursing	B.Sc.	C	C	O		C	O	O	O	3 compulsory: 3 options.
Physical Education	B.P.E.	C	C	O		C	O	O	O O O	3 compulsory: 3 options (Biology is recommended).

NOTE: In the above columns "C" denotes a compulsory subject, "O" an option.

PART II

General Organization of the University of Alberta

GENERAL ORGANIZATION OF THE UNIVERSITY OF ALBERTA

VISITOR

THE HONORABLE JOHN PERCY PAGE, B.A., B.C.S., LL.D., Lieutenant-Governor of Alberta.

The Lieutenant-Governor of the Province, as representative of Her Majesty the Queen in right of the Province, is *ex officio* the Visitor of the University.

CHANCELLOR

HIS HONOUR JUDGE LAURANCE YEOMANS CAIRNS, B.A., LL.D.

The Chancellor is elected for a term of six years by the members of Convocation. He is the chairman of Convocation and of the Senate, confers all degrees, and is *ex officio* a member of the Board of Governors.

PRESIDENT

WALTER HUGH JOHNS, B.A., Ph.D., LL.D.

The President is the chief executive officer of the University. He is appointed by the Lieutenant-Governor in Council. He is *ex officio* a member of the Board of Governors, of the Senate, and of all Faculty Councils. He presides in General Faculty Council and in other Faculty Councils when he is present. He is entrusted with the general supervision of the academic work of the University and of the teaching staff and of the administrative staff concerned with academic work. He makes recommendations to the Board of Governors in respect of all appointments to the teaching staff and to the administrative staff of the University concerned with academic work and in respect of all promotions and removals of such members of the staff.

PRINCIPAL, UNIVERSITY OF ALBERTA, CALGARY

MALCOLM GORDON TAYLOR, M.A., Ph.D.

GENERAL ORGANIZATION

THE BOARD OF GOVERNORS

CHARLES MALCOLM MACLEOD, Q.C., LL.B., LL.D., Chairman. (To retire February 7, 1964.)

Statutory Members

HIS HONOR JUDGE LAURANCE YEOMANS CAIRNS, B.A., LL.D.,
Chancellor of the University.

WALTER HUGH JOHNS, B.A., Ph.D., LL.D., President.

DONALD RUSSELL STANLEY, B.Sc., S.M., Ph.D., President of the
Alumni Association.

ANDERS VENOR CALHOUN, B.Sc., D.D.S., Vice-President of the Alumni
Association.

FREDERICK GAVIN STEWART, Esq., Deputy Provincial Treasurer.

WILLIAM HERBERT SWIFT, B.A., M.A., B.Ed., Ph.D., Deputy Minister
of Education.

Appointed Members

To retire February 7, 1964:

MERRILL DAVIS MUTTART, Esq.

JOHN WRIGHT PROCTOR, O.B.E., E.D., m.i.d.

MRS. M. L. McCULLOUGH.

F. CLARENCE MANNING, B.A.

JOHN HOWARD KELLY, Esq.

To retire April 26, 1965:

HERBERT THOMAS HARGRAVE, B.E.

Secretary

JOHN MACLEAN WHIDDEN, B.Comm., Bursar of the University.

The Board of Governors is a body corporate under the name and style of "The Governors of the University of Alberta." The board consists of the Chancellor, the President of the University, the President and Vice-President of the Alumni Association, the Deputy Provincial Treasurer, the Deputy Minister of Education, and the chairman and six other persons appointed by the Lieutenant-Governor in Council.

The conduct, management, and control of the University and all its property, revenue, business, and affairs are vested in the Board. The Board appoints the deans of all faculties, all members of the teaching staff, the Librarian, the Bursar, the Registrar, and all members of the administrative staff, but no dean of any faculty nor any member of the teaching staff of the University may be appointed unless first nominated by the President of the University. The board provides for the maintenance of buildings and the erection of new buildings. It has authority to purchase and acquire such property as it may deem necessary for the purposes of the University. It fixes the various fees charged in connection with university courses and it makes financial provision for the establishment of new faculties, departments, and courses.

All residuary powers, which by the terms of the University Act are not specifically granted to any other person or body of persons, are vested in the Board of Governors. The Board makes an annual report to the Lieutenant-Governor in Council. This report is transmitted to the Legislative Assembly of the Province by the Minister of Education.

The Bursar is responsible to the President for the business affairs of the University.

THE SENATE

Statutory Members

- HIS HONOR JUDGE LAURANCE YEOMANS CAIRNS, B.A., LL.D.,
Chancellor of the University.
- WALTER HUGH JOHNS, B.A., Ph.D., LL.D., President.
- CHARLES MALCOLM MACLEOD, Q.C., LL.B., LL.D., Chairman of the
Board of Governors.
- MALCOLM GORDON TAYLOR, M.A., Ph.D., Principal, Calgary.
- CHARLES FRED BENTLEY, M.Sc., Ph.D., representative of the Deans'
Council, to retire June 1, 1963.
- EDMUND JABEZ THOMPSON, M.A., B.D., Ph.D., D.D., Principal of St.
Stephen's College.
- BROTHER PRUDENT, M.A., Rector of St. Joseph's College. The Rector
of St. Aidan's College.
- TIMOTHY CLARKE BYRNE, M.A., Ed.D., Chief Superintendent of Schools.
- FREDERICK C. JORGENSEN, B.Ed., Principal, Southern Alberta Institute
of Technology and Art.
- REVEREND WILLIAM JOHN COLLETT, B.A., B.Ed., B.D., M.A., Prin-
cipal, Mount Royal Junior College.
- DONALD RUSSELL STANLEY, B.Sc., S.M., Ph.D., President of the
Alumni Association.
- ANDERS VENOR CALHOUN, B.Sc., D.D.S., Vice-President of the Alumni
Association.
- HAROLD JOHNSTON BRODIE, M.Sc., Ph.D., representative of the
General Faculty Council, to retire June 1, 1963.
- DARROCH DUNCAN CAMPBELL, B.Com., B.A., M.A., Director of Exten-
sion.
- AYLMER ARTHUR RYAN, B.A., Provost, Edmonton.
- DONALD deF. MACINTOSH, B.Ed., M.S., Provost, Calgary.
- WESLEY CRAGG, President of the Students' Union, Edmonton.
- PAUL UNONGO, President of the Students' Union, Calgary.

Appointed Members to Retire November 1, 1963

- GRANT M. CARLYLE, Calgary, representing Agriculture.
- MAURICE EARL HARTNETT, B.S.A., representing Agriculture.
- M. W. HOWEY, B.A., LL.B., Grande Prairie, representing Business.
- FRANK BODIE, Calgary, representing Labor.
- STANLEY H. McCUAIG, Q.C., Edmonton, representing Industry.
- ANNE CARMICHAEL, Edmonton, representing Public Education.
- MRS. CATHERINE ANDREWS, Lethbridge, representing Public Educa-
tion.
- WARD A. STECKLE, Calgary, representing Public Education.
- JAMES S. McCORMICK, Q.C., representing Organizations devoted to So-
cial and Cultural Welfare.
- ALEXANDER DUNCAN CAIRNS, B.A., Registrar of the University, Sec-
retary of the Senate.

GENERAL ORGANIZATION

The Senate of the University consists of the Chancellor, the President, the Chairman of the Board of Governors, the Principal of St. Stephen's College, the Rector of St. Joseph's College, the Rector of St. Aidan's College, the Chief Superintendent of Schools, the Principal of the Southern Alberta Institute of Technology and Art, the Principal of Mount Royal Junior College, the President and Vice-President of the Alumni Association, the Principal of the University of Alberta, Calgary, the Provost of the University at Edmonton, the Provost of the University of Alberta at Calgary, the President of the Students' Union at Edmonton, the President of the Students' Union at Calgary, a representative of The Deans' Council, two representatives of the General Faculty Council, the Director of the Department of Extension, and nine members selected by the foregoing to represent agriculture, business, labour, industry, public education, and organizations devoted to social and cultural welfare.

Under the University Act of 1942, more emphasis is placed upon the function of the Senate as a bridge between the University and the life and activities of the Province, and less upon academic duties. It is empowered to inquire into all matters that might tend to enhance the usefulness of the University. It is still responsible for recommending to Convocation the conferring of honorary degrees, this being a matter of public interest, but degrees in courses are now recommended by the General Faculty council. The Senate also continues to legislate with respect to student government, but the day-to-day administration of discipline rests with the Deans' Council.

Student Government

A long-standing duty and prerogative of the University Senate has been to make provision for student self-government on the campus.

To this end it established a Committee on Student Affairs in 1911. A similar committee was formed for Calgary in 1950.

The Committee on Student Affairs ratifies the Constitution of the Students' Union and receives twice yearly reports on the Union's activities. All registered students become members of the Students' Union on payment of their general fees.

Besides authorizing the activities of the Students' Union, the Committee on Student Affairs interests itself in student extracurricular life in general.

The Provost is responsible to the President for the conduct of student affairs. See also page 3.

CONVOCATION

Convocation consists (a) of the surviving members of the original group of 346 persons who registered under the original University Act of 1906, together with all such persons who have been admitted *ad eundem gradum* in the University of Alberta and have become duly registered; and (b) of all graduates of the University of Alberta.

Convocation elects the Chancellor and is authorized, if fifteen of its members by writing demand a meeting, to require the Chancellor to convoke the same, but such a meeting must be for a specific subject duly set forth in a letter of demand and no other subject may be discussed at the meeting.

The Chancellor is the chairman of Convocation.

General Faculty Council

The General Faculty Council consists of the President, the Deans, the full Professors in all the faculties, the Director of the Department of Extension, the Librarian, and the Registrar. The General Faculty Council, subject to the authority of the Board of Governors, is the senior academic body of the University. It arranges timetables, approves courses and examination results, recommends degrees, and hears appeals by students and others from decisions of Faculty Councils.

The Registrar is the secretary and administrative officer of the General Faculty Council.

Faculty Councils

Each faculty of the University has a Council consisting of the President, the Dean of the Faculty, the professors and associate professors, such other members of the teaching staff of the faculty as the Board of Governors may determine, and a representative of each of the appropriate professional societies associated with the University. Each Faculty Council, subject to the authority of the General Faculty Council, arranges the courses of study falling within its jurisdiction; it arranges for the setting of examinations and for making examination returns to the General Faculty Council. It deals with petitions and memorials from students registered in the Faculty.

The Deans' Council

The Deans' Council, consisting of the President and the Deans of all the Faculties, has advisory, executive, and disciplinary functions. It also acts as the executive body of General Faculty Council. See above.

The Deans and Directors are the executive heads of their respective Faculties and Schools, and act as chairmen in meetings. They are responsible for the supervision of the curriculum, and the budget; with the appointment and promotion of instructional personnel; and with the annual review of students' standings.

ADMINISTRATIVE OFFICERS

UNIVERSITY OF ALBERTA, CALGARY

- Principal, University of Alberta, Calgary — MALCOLM G. TAYLOR, M.A., Ph.D.
- Dean of the Faculty of Arts and Science — M. HARRY SCARGILL, B.A., Ph.D.
- Dean of the Faculty of Education — HAROLD S. BAKER, M.A., Ph.D.
- Assistant Dean, Faculty of Arts and Science — EARL F. GUY, M.A., Ph.D.
- Secretary, Faculty of Engineering — H. RUSSELL McARTHUR, B.A.Sc., M.A., D.L.S.
- School of Physical Education — LUTHER G. GOODWIN, M.A., B.Ed., M.Ed., Ph.D.
- Assistant Dean of the Faculty of Commerce — WILLIAM A. PRESHING, B.A., B.Ed., M.B.A.
- Director of the Summer Session and of the Evening Credit Program — THEO G. FINN, A.M., Ed.D.
- Advisor to Men Students and Acting Provost — DONALD F. MACINTOSH, B.Ed., M.S.
- Director of Medical Services — D. L. McNEIL, M.D., F.R.C.P. (C).
- Registrar — JOHN NICOL, M.A.
- Business Officer — J. WILLIAM CARVER, B.Sc., M.B.A.
- Dietitian — MISS DONNA CHRISTIE, B.H.E.
- Superintendent of Buildings and Grounds — J. A. WEBB, B.Sc.

New Administrative Appointments 1963-64

- Chairman of the Division of Engineering — A. M. NEVILLE, B.Sc., M.Sc., Ph.D.
- Assistant to the Principal — ROSS S. JACK, LL.B.
- Assistant to the Dean of Education — EDWIN L. PITT, B.A., M.A.
- Secretary to the Faculty of Arts and Science — G. RODNEY MORISSET, B.Ed., M.A.
- Director of Extension — R. S. CHAPMAN, B.Ed., M.Ed.

Student Counselling Services

- E. R. OETTING, B.Sc., M.Sc., Ph.D., Director.
- MISS H. McWILLIAM, B.A., Counsellor.

TEACHING STAFF

UNIVERSITY OF ALBERTA, CALGARY

- ADAM, F. C., B.A., M.Sc. (UBC), Ph.D. (Washington); Assistant Professor of Chemistry (1958, 1958).
- ADAM, I. W., B.A. (Alberta), M.A. (London); Assistant Professor of English (1960, 1960).
- AIKENHEAD, J. D., B.Sc. (Manitoba), A.M. (Chicago), Ed.D. (Oregon); Associate Professor of Education (1950, 1954).
- ALEXANDER, JEAN, B.A. (Oregon), M.A., Ph.D. (Washington); Assistant Professor of English (1961, 1961).
- ANDERSON, P. K., A.B. (Cornell), M.S. (Tulane), Ph.D. (California); Assistant Professor of Zoology (1961, 1961).
- ANDERSON, R. N., B.A., B.Ed. (Saskatchewan), M.A. (Minnesota); Associate Professor of Education (1959, 1962).
- ANGER, C. D., B.A., M.A., Ph.D. (California); Assistant Professor of Physics (1962, 1962).
- ANTON, F. R., B.Sc. (London School of Economics), M.A. (UCLA), Ph.D. (London); Associate Professor of Political Economy (1956, 1962).
- ARMSTRONG, D. A., B.Sc., Ph.D. (McGill); Associate Professor of Chemistry (1958, 1963).
- ASHWELL, I. Y., D.L.C. (Loughborough College), B.A., M.A. (Bristol); Assistant Professor of Geography (1962, 1962).
- BAKER, H. S., B.A. (Toronto), M.A. (Alberta), Ph.D. (Columbia); Dean of Education (1947, 1962).
- BEATON, MARY A., B.Sc., M.Ed. (Alberta); Assistant Professor of Education (1959, 1959).
- BENN, M. H., B.Sc., Ph.D. (London); Assistant Professor of Chemistry (1961, 1961).
- BIRD, C. D., M.Sc., Ph.D. (Oklahoma State); Assistant Professor of Botany (1962, 1962).
- BOUDREAU, J., B.A., M.A. (UCLA); Assistant Professor of History (1962, 1962).
- BOWEN, J. E., B.A., M.Ed. (Sydney), Ph.D. (Illinois); Assistant Professor of Education (1961, 1961).
- BRATTON, R., B.A. (Sir George Williams), M.S. (California); Lecturer in Physical Education (1961, 1961).
- BRESKY, D., J.U. Dr. (LL.D.) Prague, M.A., Ph.D. (Washington); Assistant Professor of Modern Languages (1962, 1962).
- BREUGELMANS, R., M.A., Ph.D. (Ghent); Assistant Professor of Modern Languages (1961, 1961).
- BROOKS, J. B., B.A. (New Hampshire), M.A. (Penn); Assistant Professor of English (1962, 1962).
- BROWN, A. F., B.A., B.Ped. (Manitoba), M.Ed., Ph.D. (Alberta); Assistant Professor of Education (1961, 1961).
- BROWN, R. C., B.A. (Rochester), M.A., Ph.D. (Toronto); Assistant Professor of History (1961, 1961).
- BUCKMASTER, H. A., B.Sc. (Alberta), M.A., Ph.D. (UBC); Associate Professor of Physics (1957, 1961).
- BUNYAN, L., B.Ed. (Alberta); Sessional Instructor in English (1962, 1962).
- BURGESS, G. D., B.A. (Saskatchewan), M.Sc. (McGill); Sessional Instructor in Zoology (1960, 1960).
- CAIRNS, A. T. J., B.A., M.A. (Alberta); Lecturer in English (1962, 1963).
- CHALLICE, C. E., B.Sc., Ph.D. (London), A.R.C.S., D.I.C., F. Inst.P.; Professor of Physics (1957, 1963).

TEACHING STAFF

- CHALLIS, LORNA, B.A., M.A. (London); Lecturer in English (1961, 1962).
- CHORNY, M., M.Ed. (Alberta); Assistant Professor of Education (English) (1960, 1960).
- CHURCHLEY, F. E., B.Mus. (Toronto), M.A., Ed.D. (Columbia), A.R.C.T., L.R.C.T. (Toronto); Associate Professor of Fine Arts (1959, 1962).
- dePAIVA, H. A. R., B.Sc. (Alberta), M.S., Ph.D. (Illinois); Assistant Professor of Civil Engineering (1961, 1961).
- *DEWAR, J., B.Ed. (Alberta), M.A. (Ohio); Assistant Professor of Physical Education (1961, 1961).
- DODD, E. M., B.A. (Dunelm), M.A. (Ohio State); Assistant Professor of Fine Arts (1960, 1960).
- *DOIGE, A. G., B.E., M.Sc. (Saskatchewan); Assistant Professor of Mechanical Engineering (1960, 1960).
- DOOLITTLE, Q. D., B.S. (Ithaca College), M.M. (Indiana); Assistant Professor of Fine Arts (1960, 1960).
- DOUCETTE, A. L., B.Sc., M.A., Ed.D. Emeritus Professor of Education.
- DOUGHERTY, J. P., B.A. (St. Louis), M.A., Ph.D. (Penn); Assistant Professor of English (1962, 1963).
- DUQUETTE, SHIRLEY A., B.Sc. in Ed. (Cincinnati); Assistant Professor of Physical Education (1959, 1963).
- ECCLES, PRISCILLA J., M.S., Ed.D. (Illinois); Assistant Professor of Education (1960, 1960).
- ENGELMANN, F. C., A.B., A.M. (UCLA), M.A., Ph.D. (Yale); Associate Professor of Political Science (1962, 1962).
- FINN, S. G., B.A., M.A. (Colorado College), Ph.D. (State University of Iowa); Assistant Professor of Fine Arts (1961, 1961).
- FINN, T. G., B.A. (Alberta), A.M., Ed.D. (Stanford); Professor of Education, Director of Summer Session and Evening Credit Program (1946, 1959).
- FORBES, R. L., B.Sc., M.Sc. (Alberta); Sessional Lecturer in Mathematics (1962, 1962).
- FORBIS, R. G., B.A., M.A. (Montana State), Ph.D. (Columbia); Assistant Professor of Anthropology (1960, 1963).
- FROST, B. P., B.A.Hons. (Sydney), M.A. (Tasmania), P.G.C.E. (London); Assistant Professor of Education and Clinical Psychology (1961, 1961).
- GANDY, W. E., A.M. (Western State, Colorado), Ed.D. (Stanford); Assistant Professor of Education (1960, 1960).
- GAUDETTE, D. A., B.Sc., B.Ed. (Alberta); Sessional Instructor in Industrial Arts (Southern Alberta Institute of Technology).
- GIBB, A. A., B.Sc., B.Ed. (Alberta), M.A. (Toronto), Ed.D. (Stanford); Associate Professor of Mathematics (1951, 1955).
- *GLOCKNER, P., B.Sc. (McGill), M.Sc. (MIT); Associate Professor of Civil Engineering (1958, 1962).
- GOODWIN, L., M.A., B.Ed., M.Ed. (Alberta), Ph.D. (Washington); Professor of Physical Education (1946, 1959).
- GUY, E. F., M.A. (Dalhousie), Ph.D. (Edinburgh); Associate Professor of English, Assistant Dean of Arts and Science (1953, 1962).
- HARMS, A., B.A. (Saskatchewan), Ph.D. (Colorado); Assistant Professor of Modern Languages (1959, 1959).
- HARTLAND-ROWE, R. C. B., B.Sc., Ph.D. (London); Associate Professor of Zoology (1959, 1959).
- HEBBERT, R. H. B., B.A.Sc. (UBC), M.Sc. (Queen's); Assistant Professor of Mechanical Engineering (1960, 1960).

- HEINTZ, J., A.B. (St. Lawrence University); Assistant Professor of Philosophy (1960, 1960).
- HENDERSON, NANCY E., M.Sc. (Dalhousie), Ph.D. (Toronto); Assistant Professor of Zoology (1962, 1962).
- HENSHAW, D. G., B.A.Sc., M.A.Sc. (Toronto), Ph.D. (Bristol); Associate Professor of Physics (1962, 1962).
- HERZ, T., B.Mued (Music Training Teachers' College), B.M. (Israel Academy), M.M. (Manhattan School); Sessional Instructor in Fine Arts (1962, 1962).
- HEYMANN, F. G., Ph.D. (Frankfurt); Professor of History (1959, 1961).
- HOLLAND, A. S. B., B.Sc. (Victoria University, N.Z.), M.Sc. (Montana State); Assistant Professor of Mathematics (1958, 1961).
- HUMPHRIES, M., B.A., M.A., Ph.D. (Toronto); Assistant Professor of Psychology (1961, 1961).
- HUSTON, J. P., B.Sc., Ph.D. (Alberta); Assistant Professor of Physics (1962, 1962).
- HYNE, J. B., B.Sc., Ph.D. (St. Andrews); Associate Professor of Chemistry (1960, 1960).
- INLOW, E. B., A.B. (Washington), M.A. (California), Ph.D. (Johns Hopkins); Associate Professor of Political Science (1961, 1961).
- JACOBSON, ADA L., S.B. (MIT), Ph.D. (Yale); Research Associate in Chemistry (1960, 1960).
- JENSEN, F., M.A. (Copenhagen), Ph.D. (California); Assistant Professor of Modern Languages (1961, 1961).
- JOHNSON, J. M., B.A., LL.B. (Alberta); Sessional Instructor in Commercial Law (1962, 1962).
- *KING, E. M., B.Ed. (Alberta), M.A. (Iowa); Associate Professor of Education (1955, 1962).
- KIYOOKA, H. M., B.Ed. (Alberta), B.F.A. (Manitoba), M.A. (Michigan State), M.F.A. (Colorado); Assistant Professor of Fine Arts (1961, 1961).
- KRUEGER, P. J., M.Sc. (Manitoba), D.Phil. (Oxon); Assistant Professor of Chemistry (1959, 1959).
- KUEBER, ELEANOR, B.P.E. (UBC); Sessional Instructor in Physical Education (1961, 1961).
- L'ABBE, GERMAINE, M.A. (Queen's); Assistant Professor of Education (1959, 1963).
- LANCASTER, P., B.Sc., M.Sc. (Liverpool), Ph.D. (Singapore); Associate Professor of Mathematics (1962, 1962).
- LINDSTEDT, S. A., B.Sc., M.Ed. (Alberta), Ed.D. (Wisconsin); Professor of Secondary Education (1955, 1963).
- LINTON, T. E., A.B., M.A., Ph.D. (Michigan); Associate Professor of Education (1962, 1962).
- LOGAN, JUNE, B.A., Ph.D. (Sydney); Lecturer in Psychology (1962, 1962).
- LOSIE, R. W., B.Comm. (Alberta), C.A.; Assistant Professor of Commerce (1962, 1962).
- MAGEE, W. H., B.A., M.A. (UBC), Ph.D. (Toronto); Associate Professor of English (1962, 1962).
- McARTHUR, H. R., B.A.Sc. (UBC), M.A. (Washington), D.L.S.; Associate Professor of Applied Mechanics (1954, 1957); Secretary of the Faculty of Engineering.

TEACHING STAFF

- MACINTOSH, D. F., B.Ed. in Phys.Ed. (Alberta), M.S. (Washington); Assistant Professor of Physical Education (1958, 1959); Advisor to Men Students and Acting Provost.
- MAMO, P. S., B.A., M.A. (Toronto); Assistant Professor of Philosophy (1961, 1961).
- MILLS, D. L., B.A. (Idaho), M.A., Ph.D. (Stanford); Assistant Professor of Sociology (1961, 1961).
- MORISSET, G. R., B.Ed. (Alberta), M.A. (London); Lecturer in English and Secretary to the Faculty of Arts and Science (1962, 1963).
- MORRIS, D. V., B.Ed. (Alberta); Sessional Lecturer in Educational Administration (1962, 1962).
- MYDLARSKI, H., Baccalaureate (Academy of Paris); Sessional Instructor Modern Languages (1962, 1962).
- NELSON, J. G., B.A. (McMaster), M.A. (Colorado), Ph.D. (Johns Hopkins); Assistant Professor of Geography (1960, 1960).
- NELSON, S. J., M.A.Sc. (UBC), Ph.D. (McGill); Associate Professor of Geology (1954, 1962).
- NEWTON, B. M., B.Sc. in Ed. (Southern California), A.M. (Chicago), Ed.D. (Missouri); Associate Professor of Education (1945, 1955).
- NOBUSAWA, N., M.Sc., Ph.D. (Osaka); Assistant Professor of Mathematics (1962, 1962).
- NORRIS, S., B.Ed. (Alberta), A.M., Ed.D. (Stanford); Associate Professor of Education (1956, 1962).
- OETTING, E. R., B.Sc., M.Sc., Ph.D. (Wisconsin); Associate Professor of Psychology and Director of Student Counselling Services (1961, 1961).
- OLIVER, T. A., M.Sc. (Manitoba), Ph.D. (California); Associate Professor of Geology (1959, 1963).
- ORME, M. E. J., B.Ed. (Alberta); Lecturer in Education (1961, 1961).
- OYLER, J. E., M.A. (Alberta), Ph.D. (Northwestern); Associate Professor of Modern Languages (1960, 1963).
- PECK, J. E. L., M.Sc. (South Africa), Ph.D. (Yale); Professor of Mathematics (1959, 1963).
- PLOTNICK, A. R., B.A. (Temple), M.A., Ph.D. (Penn); Assistant Professor of Political Economy (1961, 1961).
- PRESCOTT, J. R., B.Sc. (Adelaide), Ph.D. (Melbourne), D.Phil. (Oxon); Associate Professor of Physics (1961, 1963).
- PRESHING, W. A., B.A., B.Ed. (Alberta), M.B.A. (Western Ontario); Assistant Dean of Commerce (1957, 1962).
- PRINCE, A. R., B.A. (Acadia), M.A. (Harvard); F.A.A.A.S., Associate Professor of Botany (1951, 1955).
- RAY, AMELIA, B.A., M.A. (Texas Christian); Sessional Lecturer in English (1962, 1962).
- RAY, D. E., A.B. (Texas Christian), Ph.D. (Rice); Assistant Professor of English (1962, 1962).
- SCARGILL, M. H., B.A., Ph.D. (Leeds); Professor of English, Dean of Arts and Science (1948, 1962).
- SCHAEER, J., Maturitat Stadt. Gymnasium, D.Phil. (Berne); Assistant Professor of Mathematics (1962, 1962).
- SCHONFIELD, A. E. D., M.A. (Cantab); Associate Professor of Psychology (1957, 1959).
- SCHWARTZ, MILDRED, B.A., M.A. (Toronto); Assistant Professor of Sociology (1962, 1962).
- SELF, G. M., M.A. (McGill), Ph.D. (Chicago); Associate Professor of History (1947, 1955).

- SHARMA, A., B.A. (Maharaja's College, Jaipur), M.A., Ph.D. (Lucknow); Associate Professor of Mathematics (1962, 1962).
- SHIELDS, R. A. M., M.A. (Manitoba), Ph.D. (Penn.); Assistant Professor of History (1960, 1960).
- SHIMRAT, M., B.Sc., M.Sc. (Jerusalem), Ph.D. (Jerusalem & Manchester); Assistant Professor of Mathematics (1961, 1961).
- SNIDER, J. G., M.S. (Idaho); Assistant Professor of Education (1960, 1960).
- SORENSEN, T. S., B.Sc. (Hons) Alberta), Ph.D. (Wisconsin); Assistant Professor of Chemistry (1962, 1962).
- SPENCE, D. L., A.B. (Long Beach State); Assistant Professor of Sociology (1962, 1962).
- STADELBAUER, HELEN B., B.Sc., M.A. (Columbia); Associate Professor of Fine Arts (1945, 1955).
- STEIN, W. W., A.B. (Buffalo), Ph.D. (Cornell); Assistant Professor of Anthropology (1961, 1961).
- STILWELL, W. H., B.A. (Drake), M.A. (Toronto); Associate Professor of Civil Engineering (1957, 1960).
- STOREY, A. G., B.A., B.Ed. (Sask.), M.A., M.Ed. (Alberta), Ph.D. (Stanford); Associate Professor of Education (1956, 1959).
- SWIFT, D. F., Teacher's Cert. (Alsager), B.Sc. (Hull); Assistant Professor of Educational Foundations (1962, 1962).
- TAVARES, D. F., A.B. (Brown), Ph.D. (Yale); Assistant Professor of Chemistry (1962, 1962).
- TAYLOR, M. G., M.A., Ph.D. (California); Professor of Political Science, Principal (1960, 1960).
- TAYLOR, M. J. H., B.A., Dip. Ed. (Cardiff); Lecturer in English (1962, 1962).
- TENER, R. H., B.A., Dip. in Ed., M.A. (UBC), Ph.D. (London); Assistant Professor of English (1962, 1962).
- TERENTIUK, F., B.Sc. (Alberta), M.A., Ph.D. (UBC); Associate Professor of Physics (1958, 1961).
- TOEWS, J. B., A.B. (German Tabor College), M.A., Ph.D. (Colorado); Assistant Professor of History (1962, 1963).
- WEIR, MARY R. S., B.Sc., Ph.D. (Berkeley); Assistant Professor of Chemistry (1962, 1963).
- WILSON, B. G., B.Sc. (Queen's, Belfast), Ph.D. (National University of Ireland); Associate Professor of Physics (1957, 1960).
- WINSPEAR, A. D., B.A. (Queen's), M.A. (Oxon); Professor of Classics (1957, 1962).
- WOODSWORTH, J. G., B.A., B.Ed. (Alberta), Ed.D. (Stanford); Professor of Education (1951, 1962).
- WRIGHT, R. W., B.Comm. (Alberta), Dip.Bus.Ad. (Western Ontario), M.A. (Alberta), Ph.D. (Manchester); Assistant Professor of Political Economy (1962, 1962).
- ZENTNER, H., B.A. (UBC), M.A., Ph.D. (Stanford); Associate Professor of Sociology (1960, 1962).

New Faculty Appointments 1963-64

- AHUJA, J. C., B.A., M.A. (Banaras Hindu University); Assistant Professor of Mathematics (1963, 1963).
- BACHELOR, F. W., B.S. (Berkeley), Ph.D. (MIT); Assistant Professor of Chemistry (1963, 1963).
- BELLETTE, A. F., B.A. (Tasmania), M.A. (UBC); Lecturer in English (1963, 1963).

TEACHING STAFF

- BETZ, H., B.A., M.A. (Heidelberg); Visiting Professor of Political Economy (1963, 1963).
- BLANK, S. S., B.A., M.A. (UBC), Ph.D. (California), Assistant Professor of Educational Psychology (1963, 1963).
- BOWERING, G. H., B.A., M.A. (UBC); Lecturer in English (1963, 1963).
- CHEAL, J. E., M.Ed. (Alberta), LRSM (London), ARCT (Toronto), Ph.D. (Chicago); Associate Professor of Educational Administration (1958, 1963).
- COULSON, M. R. C., B.A. (Durham), M.A. (Kansas); Assistant Professor of Geography (1963, 1963).
- COX, D., B.Sc., M.A. (London); Assistant Professor of Political Science (1963, 1963).
- EDGINGTON, E. S., B.S., M.S. (Kansas State), Ph.D. (Michigan State); Associate Professor of Psychology (1963, 1963).
- GENTLES, AILEEN E., B.A. (London), M.A. (UBC); Sessional Lecturer in History (1963, 1963).
- GIBSON, D., B.A., M.A., Ph.D. (Toronto); Assistant Professor of Psychology (1963, 1963).
- GORDON, D. R., B.A. (Queen's), M.A. (Toronto); Assistant Professor of Political Economy (1963, 1963).
- GREAVES, A. A., B.A. (Nottingham); Assistant Professor of Modern Languages (1963, 1963).
- HAMILL, L., B.S., M.S. (Syracuse), Ph.D. (Washington); Assistant Professor of Geography (1963, 1963).
- JOHNSON, D. B., B.A. (UBC), M.A. (Alberta); Sessional Lecturer in Geography (1963, 1963).
- LAKSHMIKANTHAM, V., B.A., M.A., Ph.D. (Osmania); Associate Professor of Mathematics (1963, 1963).
- LAMBERT, R. A., B.Ed., M.Ed., Ph.D. (Alberta); Associate Professor of Educational Psychology (1963, 1963).
- LAWSON, R. F., B.A., M.A. (Michigan); Assistant Professor of Educational Foundations (1963, 1963).
- LEIPER, JEAN, B.P.E. (UBC); Instructor in Physical Education (1961, 1961).
- LUETHY, I. C. E., B.A., M.A. (California), M.A. (UBC); Assistant Professor of Modern Languages (1963, 1963).
- MEIR, A., M.A., Ph.D. (Hebrew University); Assistant Professor of Mathematics (1963, 1963).
- MITCHELL, H., B.A. (Manitoba), M.A. (Minn.), Ph.D. (London); Associate Professor of History (1963, 1963).
- MUNSAT, S., B.A. (Cornell), M.A. (Michigan); Assistant Professor of Philosophy (1963, 1963).
- MYRES, T. M., B.A., M.A. (Cambridge), M.A., Ph.D. (UBC); Assistant Professor of Zoology (1963, 1963).
- NEVILLE, A. M., B.Sc., M.Sc., Ph.D. (London); Professor of Civil Engineering and Chairman, Division of Engineering (1963, 1963).
- OGILVIE, R. T., B.A., M.A. (UBC), Ph.D. (Washington State); Assistant Professor of Botany (1963, 1963).
- PENELHUM, T. M., M.A. (Edinburgh), B.Phil. (Oxford); Associate Professor of Philosophy (1953, 1959).
- REICHENBACH, P., B.Sc., M.Sc. (Oregon); Assistant Professor of Physical Education (1962, 1962).
- SIMONY, P. S., B.Sc., M.Sc. (McMaster); Assistant Professor of Geology (1963, 1963).

- SMEATON, B. H., B.A., M.A. (California), Ph.D. (Columbia); Associate Professor of English (1963, 1963).
 STILES, D. A., B.Sc. (Birmingham); Assistant Professor of Chemistry (1963, 1963).
 ZAITZEFF, S. I., A.B., M.A. (Indiana); Lecturer in Modern Languages (1963, 1963).

The first of the dates in each case is that of first appointment, and the second that of attaining the present rank. An asterisk indicates leave of absence.

THE LIBRARY

A new five-story library building will be ready for occupancy in September, 1963. A total of 70,000 volumes is available and is being increased at the rate of 25,000 volumes a year. The library staff for 1963-64 will total 34 members, in addition to student assistants.

Library Staff

- RYDER, DOROTHY E., B.A. (UBC), B.L.S. (McGill); Librarian.
 SKEITH, M. ELIZABETH, B.A. (Queen's), B.L.S. (McGill); Chief Processing Librarian.
 CARRIER, LOIS, B.A. (Sask.), B.L.S. (Toronto); Reference and Circulation Librarian.
 REES, PHILIP D., B.A., (UBC), B.Ed. (UBC), B.L.S. (Toronto); Order Librarian.
 KELLNER, HAZEL E., B.A. (Saskatchewan), B.L.S. (Toronto); Library Assistant, Cataloguing.
 SCHEFFER, EDITH C., B.A. (UBC), B.L.S. (McGill); Library Assistant, Cataloguing.
 SMITH, HELEN M., B.A. (Queen's), B.L.S. (UBC); Library Assistant, Cataloguing.

New Appointments 1963-64

- ALLINGHAM, MARGOT, B.A., B.L.S. (Toronto); Reference Librarian.

DEPARTMENT OF EXTENSION

The purpose of the Department of Extension is to bring the facilities of the University within the reach of every citizen of the Province. To this end it cooperates with individuals and organizations in projects which advance the social, economic and cultural standards of the community.

GENERAL ORGANIZATION

JUNIOR COLLEGES

Two Junior Colleges in southern Alberta are affiliated with the University of Alberta and maintain a close academic relationship with the University of Alberta, Calgary. They are: Lethbridge Junior College, Lethbridge, and Mount Royal Junior College, Calgary.

The conditions of admission to university courses and programs at Junior Colleges will be those which obtain in the University of Alberta.

The examinations of the Junior Colleges in courses offered for university credit will be the regular University examinations of the first year.

University credit is given for university courses successfully completed at the Junior Colleges.

The teaching staffs of the Junior Colleges affiliated under these regulations are:

Mount Royal College, Calgary

ALFONSO A. ARIANO, M.A. (McGill); Instructor in French and Latin.
JOSEPH P. CACCAMO, B.Com. (Carleton), M.A. (Toronto); Instructor in Economics.

PETER D. CHIMBOS, B.A. (Great Falls), M.A. (Montana State); Instructor in Sociology.

W. JOHN COLLETT, B.Ed., B.A., B.D. (Alberta), M.A. (Columbia), D.D. (St. Stephen's); Principal and Instructor in Psychology and Sociology.

CHARLES H. COOK, LL.B. (Saskatchewan), M.B.A. (Western Ontario); Instructor in Business Administration.

M. STANFORD FEADER, C.D., B.A. (Queen's), B.Com. (Ottawa), M.B.A. (Western Ontario); Instructor in Business Administration and Economics.

HENRY M. GUTMAN, B.Com. (Alberta), C.A.; Instructor in Accounting.

GEORGE E. HANSEN, B.Sc. in Ed. (Georgia); Instructor in Physical Education.

DAHL ALLEN HARVEY, B.Sc. (Manitoba), M.A. (Toronto); Instructor in Physics and Mathematics.

OWEN A. KELLY, M.A. (Alberta); Instructor in English.

JOHN C. KENYON, B.Sc. (Alberta); Instructor in Mathematics.

RALPH W. McCREADY, B.Sc. (Alberta), M.Sc. (Illinois); Instructor in Chemistry.

ROGER I. McPHERSON, B.Sc. (Durham), M.Sc. (Montana School of Mines), F.G.S., A.S.P.G.; Instructor in Geology.

JOAN E. SOROKAN, B.Ph.Ed. (Toronto); Instructor in Physical Education.

STEPHEN G. SOROKAN, B.Sc. (Alberta), M.Sc. (Minnesota); Instructor in Zoology.

ROBERT G. WYCKHAM, B.A. (Waterloo), M.B.A. (Western Ontario); Instructor in Business.

Lethbridge Junior College

LOGIE, LEON JAMES, B.A., M.A., B.Ed.; English.

THOMPSON, W. L., B.A., M.A.; Psychology.

ROBINSON, WAYNE T., B.A., B.Ed., M.A.; English.

LIEBE, J. P., B.A., Ph.D.; German.
 MANN, GEORGE, B.Ed., M.Ed.; Sociology.
 HOYE, L. G., B.Sc., M.Sc.; Mathematics.
 MYSHOK, N., B.Ed., M.Sc.; Chemistry.
 SHARP, WM. H., B.Sc., M.Sc.; Botany.
 BULLOCK, ROBERT, B.Sc., M.Sc.; Zoology.
 RICKER, H. O., B.Com., M.A.; Economics.
 HARVEY, D. A., B.Sc., M.A.; Physics.
 PUTLAND, A. K., B.A., M.A., B.Mu. B. Paed.; Music.
 NADEAU, MRS. R. T., B.A., B.Ed.; French.
 BOWIE, G. W., B.Sc., M.Sc.; Physical Education.
 COUSINS, DEAN W. J., B.A., M.A.; History.
 TWA, R. J., B.Ed., M.Ed.; Vocational Director.
 JOHNSON, CARL B., B.Sc., M.A.; Principal.

AFFILIATED INSTITUTIONS

The Southern Alberta Institute of Technology and Art

This institution, situated in Calgary and operating under the authority of the Department of Education, was affiliated with the University of Alberta by resolution of the Senate, May 13, 1926.

In addition to courses of the nature implied by its title, it provides instruction in programs leading to the degree of B.Ed. in Industrial Arts.

The Principal is Mr. F. C. Jorgenson, B.Ed.

The Western Board of Music

This board was founded in 1935 in order to conduct examinations of a high standard in Music. In it are associated the Universities and the Departments of Education of Alberta, Manitoba and Saskatchewan.

The organization in Alberta is under the University Committee on Music, and the University awards the diplomas of A.Mus. (Alberta) and L.Mus. (Alberta) for the second highest and the highest grades, respectively, in the various subjects. Passes in certain examinations of the Board are required of students proceeding towards the degree of Bachelor of Music in Performance.

Theoretical and practical examinations are held in Alberta in February and the summer of each year.

Further details, including information about prizes and awards, are to be found in the Music Syllabus, or other official publication obtainable from the Western Board of Music, Department of Fine Arts, University of Alberta, Edmonton.

The Provincial Laboratory of Public Health

This institution, which is established both at Edmonton and Calgary, is administered by the University and its senior staff members at Edmonton are members of University teaching departments and conduct certain University courses within the Laboratory building.

The staff in Calgary includes:

D. SHUTE, M.B., Ch.B., M.D. (Manchester), D.T.M. (Liverpool); Director of Provincial Laboratory of Public Health (Calgary).
 ERIKA P. CRICHTON, M.B., Ch.B. (Glasgow); Chief Assistant and Bacteriologist, Provincial Laboratory of Public Health (Calgary).

PART III

General Regulations

General regulations applicable to all faculties of the University are to be found in this part of the Calendar.

In other parts of this Calendar appear the programs of study administered by the separate Faculties, together with regulations governing these programs.

DISCIPLINE

Administration of Student Discipline

When a student enters the University, it is expected that he will apply himself to his studies and conduct himself with propriety. Should a student fail to live up to these expectations, the University reserves the right to take such action as, in its opinion, his case warrants. The penalty of expulsion may be applied.

1. *The Deans' Council*

Although the Senate exercises jurisdiction in a general way over the conduct of students in attendance at the University, the actual day-by-day administration of student discipline has since 1942 been vested in the Deans' Council, and in those persons and bodies to which its authority has been delegated.

2. *The Provost, the Adviser to Women Students, and the Adviser to Men Students*

The Provost of the University exercises general supervision over the conduct and welfare of the students. He is Secretary of the Deans' Council and of the Committee on Student Affairs, and Chairman of the General Residence Committee. He works in co-operation with the Dean of Women and the Adviser to Men Students.

3. *The Disciplinary Committee of the Students' Union*

The Students' Union is concerned with all matters of discipline and is, as a matter of policy, given the first opportunity to deal with any disciplinary issue that may arise. For this purpose it has set up a Disciplinary Committee.

Special Regulations of the Board of Governors

(1) All interference on the part of any student with the personal liberty of another or any conduct on the part of any student subjecting another student to any indignity or personal violence is forbidden. No initiation ceremony involving physical violence, hazing, personal indignity, interference with personal liberty or destruction of property may be held within the buildings or on the grounds of the University, such student activities being expressly forbidden under penalty of suspension or expulsion.

The University authorities will not be responsible for any accident or illness of any kind occasioned to any student while engaged in or being subjected to any such activities.

(2) In the case of dishonesty or any serious indiscipline in the classroom, the instructor has the authority of suspension from the classroom. Further action is to be taken by a committee consisting of the Provost and the department and Dean concerned.

(3) The use of, bringing or having of liquor on University premises, is strictly prohibited.

(4) The Board of Governors considers the raiding or unlawful entry of residences as a very grave offence. Any such occurrence will be reported to and dealt with by the Board.

DISCIPLINE

Relation of Scholastic Standing to Extracurricular Activities

To be eligible (1) to represent the University in any competition with outside organizations, (2) to participate in non-competitive University activities which are open to the general public, or (3) to hold office in a student organization, a student must be a bona-fide student, and meet the requirements of *satisfactory scholastic standing*.

1. Bona-fide students are:

- (i) students doing full undergraduate work in the University; or
- (ii) graduate students in attendance carrying a full year's work leading to a degree; or
- (iii) students in affiliated colleges carrying a full year's work leading to a diploma or certificate and taking two full courses of University grade in the University.

Bona-fide students may assume that they are scholastically eligible to participate in the activities listed above unless they are informed otherwise by their Deans or Directors. However, men students desiring to participate in events sponsored by the Western Canadian Intercollegiate Athletic Union, must meet the requirements of scholastic standing laid down by that body.

Satisfactory Scholastic Standing

2. At the beginning of the Fall term, all students who have an average standing of 60% or higher as recorded by their official record of marks, shall be deemed to have "Satisfactory Scholastic Standing." That is to say, first-year students must have an average of at least 60% in their matriculation subjects; second-year students must have an average of at least 60% in their first-year final standing; third and fourth-year students must have an average of at least 60% in the final marks from their immediately previous year.

After the mid-session examinations (in January) the results will be reviewed and students who have failing marks in more than half their subjects (four out of six, three out of five, etc.) will be deemed to lack "Satisfactory Scholastic Standing" and *will be required* to drop out of extracurricular activities. All courses, whether half or full, shall be counted equal for the computation of this ratio. Students with poor standing, but somewhat higher than that described above, (students who have failed in three out of six, two out of five, etc.) *may* be advised to drop out of extracurricular activities.

3. A committee shall be appointed by the Principal, to receive the list of names of students to whom these regulations apply, to review their scholastic standing at the beginning of the Fall term and after the mid-session examinations, and to report to the respective Deans the names of those students who lack satisfactory academic standing.

If a student feels at any time that there are circumstances which might have a bearing on his eligibility to participate, he should consult the Dean of his faculty or the Director of his school as soon as possible and explain these circumstances to him.

ACCOMMODATION

Automobile Registration and Use

Each UAC student operating a motor vehicle on the UAC campus must register it annually with the University Campus Police at the beginning of the academic session. Owners of unregistered vehicles will be subject to fines. There is no fee for registration, but a valid operator's license and evidence of public liability insurance in force must be produced. All motor vehicle operators are responsible for complying with the regulations applying to the use of students cars and parking.

Enforcement of the regulations is a responsibility of the University Campus Police.

ACCOMMODATION

Residences

University residence accommodation will not be available at the University of Alberta, Calgary, during the 1963-64 term.

Housing

Student Counselling Services prepares lists of rooms prior to the summer session and to the regular session and these lists may be consulted by students looking for such accommodation.

University Cafeteria

The University Cafeteria provides a full meal service for the convenience of students.

STUDENT SERVICES

Medical

It is the intention of the Student Medical Service that competent medical care be provided and easily available, in order that the student's university term may not be influenced by illness. The student will receive attention either in the Student Medical Service Department or be directed by this Department to appropriate consultation or medical, para-medical or hospital facilities.

A Student Medical Service Fund is maintained by an annual appropriation from fee revenue. This trust fund is administered by a committee consisting of the Director of Student Medical Service, who is a physician appointed by the University, Chairman; the Staff nurse, Secretary; the Business Officer of the University; certain representatives of the faculty of the University; and the Business Manager of the Students' Union.

All undergraduate students, and such graduate students as have paid the necessary fee, are entitled to medical treatment under such conditions and provisions as are outlined below.

A physician will be in attendance at the Student Medical Service office each day and at hours which will be displayed. Further medical consultation may be arranged outside of the Medical Service office by appointment at the request of the Director of the Student Medical Service or the physician in attendance.

A Registered Nurse will be available in the Medical Service office during University hours.

Arrangements will be made as necessary for the more seriously ill student to receive hospital care under a suitably qualified physician or surgeon.

For the benefit of students whose homes are not in Calgary, instructions on procedure in case of sickness outside of office hours will be published separately after the opening of the session.

Counselling

Two faculty members are appointed to be Adviser to Men Students and Adviser to Women students. They are accessible to all students throughout the year for friendly informal discussions.

Organized counselling services are also provided on the campus by several church groups. Their chaplains act as advisers in all areas in which students can encounter difficulties.

The heads of departments will provide help in choice of courses, selection of the major field of study, and general advice on academic matters. The Registrar's Office will arrange appointments on request.

There is a student counselling service staffed by professionally trained counsellors for both university and prospective students. The counselling service operates throughout the year.

Prospective students may consult regarding choice of university program and vocational planning. Appointments should be arranged in the second term of the Grade XII year or during the following summer.

University students may make use of the service regarding choice of program, vocational planning, personal matters and progress with studies.

- (1) *Testing Service.* A few basic tests are given to all incoming freshmen at the time of registration. Vocational inventories and other individual tests are also available.
- (2) *Study Skills.* A series of study tutorials is arranged each session for new students.
- (3) *Vocational Planning.* Students may consult Student Counselling Services about future plans, including further possible professional training.
- (4) *Student Housing Service.* See page 5.
- (5) *Financial Aid.* The Student Counselling Service in Calgary acts for the Administrator of Student Awards in all matters concerning financial aid.
- (6) *Personal Problems.* Occasionally a student's performance suffers because of worry, restlessness, inability to concentrate, or preoccupation with personal problems. In these circumstances, the student should consult a counsellor as soon as possible.
- (7) *Change of Faculty.* Students contemplating a change of School or Faculty are advised to consult a counsellor. This should preferably be done well before the opening of the session.
- (8) *Withdrawal from the University.* Any student who for any reason is contemplating withdrawal from the University should arrange an interview with a counsellor.
- (9) *Unsatisfactory Standing.* Counselling is advised and, in the case of extremely poor standing required, in all instances of unsatisfactory standing.

FEES

Payment

Undergraduate fees are due and payable immediately after registration. If desired, payment may be made in two instalments, in which case an additional charge of \$3.00 will be added to the second instalment. The first instalment consists of full General fees and approximately 60% of the Instruction Fee. (Instalment privileges are not available to students taking less than two full day-time courses.)

A student will not be entitled to receive a statement of marks until fees, library charges, traffic violation fines, and other incidental bills are paid. A student will not be registered in a succeeding year unless all his overdue University bills are paid in full.

Dates and Penalties

The last date for payment of fees is October 15th. If one is paying in two instalments the last date for payment of the first instalment is October 15th; the second instalment—January 15th. A penalty of \$5.00 will be charged on any payments made or postmarked after these dates. In addition, if payment has not been made by October 31st for first-term fees and January 31st for second-term fees, registration will be subject to cancellation and the student to exclusion from classes. A re-assessment of fees will be made to the date of cancellation and the amount unpaid entered on the student's record. Future registrations will not be accepted until the account has been settled.

Method of Payment

Students may make payments direct to the Cashier in the Arts and Education Building or by mail to the Business Officer. During the registration period and up to October 15th a special deposit box is provided in the rotunda of the Arts and Education Building for payment of fees by cheque.

All cheques should be payable at par to the University of Alberta.

The fee card stub must be presented with payment or enclosed if payment is made by mail or through the deposit box. The fee card stub will be returned to the student along with a cash register receipt.

If fees are to be paid from some form of students' assistance it is the responsibility of the student to so advise the Cashier and (except in the case of Province of Alberta assistance) to produce a letter from the source of the assistance as confirmation. This must be done before the deadline for payment of fees to avoid the penalty. If the assistance is not forthcoming a late payment penalty will be assessed.

*Late
Registration*

When a student is permitted to register late, the last date for payment of fees will be fifteen days after the date of assessment. A penalty of \$5.00 will be charged for any payment after this date.

Withdrawal

When a student withdraws with the approval of his Dean an adjustment will be made on a pro rata basis except that no refunds will be made where withdrawal or cancellation is subsequent to March 15. In the case of a full-time under-graduate student an administrative charge of \$10 will be made. In any other case the administrative charge will be the amount of the registration fee.

FEES

UNDERGRADUATE PROGRAMS

I. *Full-time Students* The University reserves the right to change these fees from year to year without notice.

Since students' fees cover approximately one-fifth of the cost to the province of their University education, the administration must make certain that only those students remain in the University who make effective use of its resources and opportunities.

General Fees

Students' Union:	
General	\$ 15.50
Building Fund	17.00
University Athletic Board	7.00
	<hr/>
	\$ 39.50

Students will be assessed for extra-ordinary damage to furniture, apparatus, books, etc.

Instruction Fees

As used here the word "session" refers to the academic year from September to April, that is, two terms—fall and winter.

<i>Faculty of Agriculture:</i>	
Per session	\$350.00
<i>Faculty of Arts and Science:</i>	
(a) B.A.:	
Per session*	\$300.00
(b) B.Mus.:	
Per session	\$300.00
(c) B.Sc.:	
per session*	\$350.00

*A student who transfers from a B.A. to a B.Sc. program in either the second or third year will be subject to a fee adjustment of the difference between the amount actually paid and the amount which would have been assessed had he registered initially in the B.Sc. program.

<i>Faculty of Commerce:</i>	
Per session	\$350.00
<i>Faculty of Dentistry:</i>	
Pre-dental course (Arts and Science), first or second year:	
Per session	\$350.00
<i>Faculty of Education:</i>	
Per session	\$300.00
<i>Faculty of Engineering:</i>	
Per session	\$400.00
<i>School of Household Economics:</i>	
Per session	\$350.00

School of Nursing:

Per session

\$350.00

School of Physical Education:

Per session

\$300.00

*II. Part-time
Students**General Fees*

	1 Course	2 Courses	3 Courses
Registration	\$ 2.00	\$ 2.00	\$ 2.00
Medical Services*	—	—	12.00
Students' Union	—	9.00	32.50
University Athletic Board**	7.00	7.00	7.00

*Optional at registration only (not available for students taking less than 3 courses).

**Optional at registration.

Instruction Fees

	Full Course	Half Course
Arts and Science	\$80.00	\$40.00
Commerce	80.00	40.00
Education	80.00	40.00
Auditor	12.00	6.00

In all other Schools and Faculties the fee assessments will be based upon the proportion the hours of instruction in the courses taken bear to the total number of hours of instruction in a normal year's work in the faculty concerned. For the purpose of assessment of fees, students who are taking two-thirds or more of a full year's work will be treated as full-time students. In no case will the total fees assessed any special or partial student exceed the total fee for a normal year's work, nor will the minimum assessment for tuition for one full course be less than \$80.00.

FEES

GRADUATE PROGRAMS

General Fees

Registration	\$10.00
Graduate Students' Association	6.00
Students' Union:	
Associate Membership	6.00
or	
Full Membership (optional at registration only)	32.50
University Athletic Board (optional at registration only)	7.00

Instruction Fees

D.Sc. or D. Litt. degree	\$325.00
Ph.D. or Ed.D. degrees (Holders of Master's Degree) \$325.00 a year for two years	650.00
Ph.D. or Ed.D. degrees (Holders of Bachelor's Degree) \$325.00 a year for three years	975.00
Masters degrees (Holders of Bachelor's degree with honors or of the B.Sc. degree from a four-year undergraduate program). One year at	325.00
Master of Education degree, one year at \$325, and one at \$165.00	490.00
Masters degrees (Holders of any Bachelor's degree from a three-year undergraduate program). \$325.00 a year for two years	650.00
Master of Education degrees for which residence credit is obtained at Summer Session, Three Sessions at \$165.00 (Applicable only to students on program before September, 1963.)	495.00
Subsequent years for all doctoral and masters candidates	40.00

Special and provisional graduate students taking courses other than those credited toward a degree program will be assessed \$80.00 per full course and \$40.00 per half course to a maximum of the fee for a full year's program of senior work in the appropriate faculty.

Part-time Students:

Part-time students in all categories will be assessed \$80.00 per full course and \$40.00 per half course up to the amount of the total instruction fee for the full program. Part-time students shall be subject to an extra assessment of \$40.00 for each registration in excess of three. Any outstanding balance will be assessed in the student's final session.

Student Health Services, optional at registration	\$12.00
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Special Fees

The following special fees are applicable to all faculties and will be assessed in particular cases as they apply.

Visé fee for non-Alberta certificates (except in Graduate Studies):

Canadian	\$ 5.00
Others	10.00
Applications received after the deadline	\$10.00 + \$1.00 a day (maximum \$25.00)
Late registration	\$ 3.00 + \$1.00 a day
Late payment of fees	\$ 5.00
Examinations (each subject)	
Deferred final	\$ 5.00
Special deferred final	10.00
Supplemental	10.00
Special supplemental	15.00
Late application for supplemental	5.00
Examination at outside centre	5.00
Reappraisal of marks	10.00
Transcript of record	1.00
Summer reading courses in languages	5.00

*Examination Fees**Final Examinations:*

No fee is levied for final examinations written during regular examination periods.

Deferred Final Examinations:

A fee of \$5.00 is charged for each deferred final written during regular supplemental examination periods. The fee for special deferred finals requiring the setting of special papers is \$10.00 per paper.

Supplemental Examinations:

A fee of \$10.00 is charged for each supplemental examination written during a regular supplemental examination period. Applications for September examinations received after August 10 must be accompanied by an additional fee of \$5.00 and may not necessarily be accepted.

Special Supplemental Examinations:

For special supplemental examinations requiring the setting of special papers, a fee of \$15.00 is charged for each subject.

Outside Centres:

An additional fee of \$5.00 per subject is charged for writing examinations in established Alberta centres other than Edmonton and Calgary.

EXPENSES

Fees and Costs The major items of expenditure for a student are tuition fees, and room and board.

The first-year student, if he is a non-resident of Calgary, should allow \$1,250 (with an additional \$100 for Engineering) for the first year's expenses.

A breakdown of expenses in the first year is roughly somewhat as follows:

Fees	\$300.00-\$400.00
Books and Supplies	100.00-\$175.00
Board, Room and Laundry	475.00- 550.00
Recreation, about	50.00
Incidentals, about	125.00

Fees, books and supplies vary with the faculty or school; other items vary with the individual. The table does not allow for clothing needs or transportation.

FINANCIAL AID

University Grants and loans are available to students on the basis of financial need. Scholarships are normally awarded on the basis of academic and personal records to qualified applicants.

A student who expects to need financial aid should file an application when he applies for admission.

The Administrator of Student Awards, University Campus, Edmonton, administers not only University awards, but also those made under the Students Assistance Act. For further information see the Awards section of the calendar.

Armed Forces For financial assistance under the Regular Officer Training Plan and the Medical and Dental Corps Subsidization Plans, students are referred to the Awards section of the calendar.

Employment The National Employment Service Office in the Arts and Education building is operated to help students find permanent or summer jobs. The Office is prepared to advise or assist students at any time without obligation. Students who wish summer jobs are advised to register well before the end of the spring term. Those graduating should register at the beginning of the year because employer interviews begin in the early fall and continue throughout the session.

All students are advised that no full-time student has the time to attempt to earn money by outside employment during the regular session.

Railway Rates Students attending University are entitled to reduced fares and should apply to their local ticket agents for special student tickets. These tickets must be countersigned by the Registrar's Office for the return journey at the end of the session.

ADMISSION

In preparation for admission to the University, applicants are urged to broaden their reading outside of class, and to take every opportunity to broaden their competence in writing.

Interviews with heads of departments or their representatives may be arranged between 9:30 and 11:30 a.m., or between 2:00 and 4:00 p.m., Monday through Friday, during June, July and August. Those applicants needing interviews should write to the Registrar's Office well in advance, suggesting a specific date, to be sure that an admissions officer will be available.

The courses of study in the University are, unless otherwise specified, open to men and women on equal terms.

Limitation of Enrolment

Enrolment in any faculty or school must necessarily be limited to the number of students who can be accommodated. Students are normally accepted in the order of their academic standing from among the whole list of applicants and the date at which their application is received.

Classification of Students

Students are classified as graduates, undergraduates (full-time or part-time), specials, and auditors.

Undergraduate Students are those who possess full senior matriculation and who are taking one or more courses for credit towards an undergraduate degree. These students fall into two categories:

- (a) *Full-time students*—i.e. those who are registered in two-thirds or more of a full year's work.
- (b) *Part-time students*—i.e. those who are registered in less than two-thirds of a full year's work.

Special Students are those who, although registered in one or more courses, are currently neither seeking credit toward a degree or diploma, nor entrance into a graduate program.

Auditors are students who have been granted official permission to attend lectures in a course on the understanding that they may not participate in class discussions, assignments, or examinations.

The audit privilege is restricted to a student who is currently registered in a degree or diploma program, and who presents to the Registrar written permission from the instructor in the course, endorsed by the student's Dean or Director, to register in the course as an auditor.

Extramural Students are those who are permitted to take a course without attending lectures. This privilege is sometimes granted to graduate students, B.Ed. candidates who possess a previous degree, and other students who have failed in one course in their graduating year and who are permitted to repeat the course without attendance.

ADMISSION

Admission

New students are enrolled only at the opening of the University in September of each year.

The general requirements for admission are an Alberta Grade XII (Senior Matriculation) certificate with credit in specified subjects.

Candidates from outside Alberta will be required to meet equivalent standards.

Students who have completed matriculation in accordance with the requirements set forth in previous calendars should submit their credits for evaluation to the Registrar's Office.

These general regulations notwithstanding, the University may, at its discretion, refuse admission to any applicant.

Duration

A student proceeding toward a first degree will normally be required to attend at least one academic year as a full-time student.

Applications

Prospective students who have not previously attended the University of Alberta must secure and complete Application for Admission forms and submit them to the Registrar's office by the prescribed deadline.

Applicants for admission to undergraduate programs may obtain forms from the Registrar of the University either at Edmonton or Calgary. Alberta Grade XII students may obtain application forms and transcript order cards from the Principal or Counsellor of their high school.

Applications for Admission should be made as soon as possible to the Registrar's office in the spring of the calendar year in which the applicant expects to enter University. Priority of application may be a factor in selection for certain courses, so application early in the candidate's last term in secondary school is desirable. The Registrar's office will hold the application pending notice of final marks and receipt of transcripts.

Since the deadline for receipt of applications for admission to most undergraduate programs is August 14, applicants should complete and return their applications before that date and should not wait to receive the results of supplemental examinations before applying.

Medical Examination

Every applicant for admission must have a medical examination and arrange for the results of the examination to be reported to the University, before his application will be regarded as complete. A medical examination report form will be supplied to each prospective applicant with his application form.

The applicant should present the medical report form to his own physician when he appears for his examination. This should be done early in August since all medical reports should be in the hands of the Director, Student Medical Services, by August 15 to ensure adequate time for review.

Transcripts

In addition, every applicant should arrange, *prior to the deadline*, for the Registrar of the University to receive *two official transcripts* of his previous education (high school and beyond), *to be sent direct from the Department of Education or other institution maintaining such records.*

Alberta applicants should apply to the Department of Education *before August 1*, to have two transcripts of their high school record, including the June Departmental Examinations, sent to the University as soon as results of these examinations become available. The fee for this service is \$2.00, payable to the Department of Education.

Students seeking credit for matriculation courses taken outside Alberta should submit their documents to the Registrar of the University for evaluation. A fee of five dollars is charged for this service if the documents are issued in Canada, and ten dollars if issued in other countries. The University reserves the right to prescribe additional examinations where there is doubt about such credits.

Restrictions

Any applicant who, after the June examination, has deficiencies due to failures that would require him to write more than two Departmental Examinations in August to meet the Admission requirements, will not be considered for admission in that same year.

Moreover, any applicant who has had to write what the University considers to be an inordinate number of examinations because of failures and low marks, in order to attain the nominal entrance requirements of the University, may be refused admission on the ground that his chances for success at the University level are remote.

A student with an extremely unsatisfactory record at another University will not be considered for admission until at least a year has elapsed from the date of his leaving that institution. Thereafter, the procedure outlined above will apply.

Advanced Standing

Students from other universities may be admitted to advanced standing except in the combined courses. Extramural credits from recognized universities may be accepted under certain conditions, but such credits will not be considered beyond the first year of university work.

The amount of advanced standing that may be granted is limited by the residence requirements of the University of Alberta, which provide that a student proceeding toward a first degree will normally be required to attend at least one academic year as a full-time student.

REGISTRATION

Advanced Placement

Students who have taken the equivalent of university courses in some other manner may be given advanced placement (i.e., excused from taking such courses) but will not necessarily be granted advanced standing in them. They may be required to substitute other courses in order to complete a program of normal weight at this university.

Although such advanced placement does not confer any university credit, it has the advantage of giving the qualified student more extensive training in the subject in which advanced placement is given.

Applications

All applications for such admission should be addressed in writing to the Registrar's office well in advance of the beginning of the session. Each application will be dealt with on its merits. The university reserves the right to require applicants for advanced standing or advanced placement to write examinations at any level including that of matriculation.

REGISTRATION

Date of Registration

At the beginning of each session every student is required to register in person on the date specified in the Academic Calendar.

The program of work for which a student seeks registration is in every case subject to the approval of the Registrar and the faculty concerned.

Students should consult the Academic Schedule at the front of this calendar for registration dates. Further necessary details will be supplied prior to registration.

- Conflicts* Registration in courses which directly conflict on the timetable will be allowed only when the permission of the Faculty Council concerned has been secured.
- Late Registration* Students are normally required to complete their registration, in person, by the date specified in the academic schedule. After the end of the registration period, registration will be permitted only in exceptional circumstances and with the payment of a penalty fee of \$3.00 plus \$1.00 per day. Where possible, application for late registration should be made to the Registrar in advance of the normal registration period.
- Pre-Registration* Each enrolled student will file with the Registrar's Office, each spring at a date to be announced, his choice of courses for the following academic year.
- Changes* A student may not abandon a course or change from one course to another without first obtaining permission from his Dean or Director. This permission in the form of a "Change of Registration" slip, signed by the Dean or Director, must be presented to the Registrar before the change becomes official.
- A single opportunity for change of courses will be provided in advance of the winter session. No changes will be permitted later than a date to be announced after the opening of the session.
- Withdrawal* A student who wishes to withdraw from the University should report at once to the Student Counselling Services in order to complete Notice of Withdrawal forms. A student who withdraws without completing such forms will not be eligible for any refund of fees, nor for exemption from fees in the event that he has not paid them.
- Student Responsibility* Each student is responsible for the completeness and accuracy of his registration. Particular care should be exercised with regard to prerequisite courses. Registration is incomplete until fees have been paid and is subject to cancellation unless payment has been made by the final date according to the regulations as stated in the section, "Payment of Fees."
- Deficiencies* Students are required to register for courses in which they are deficient before registering for other courses. Each student is also responsible for any adjustment of registration made necessary by the results of supplemental examinations.
- Time-Tabling of Courses* The Faculty Councils reserve the right to adjust registration to meet the requirement of timetables of lectures and examinations.

ATTENDANCE

- Attendance* Regular attendance is expected of students in all courses. Absences are counted from the first day of the session.
- Students having an inordinate number of unexcused absences from a course may be refused permission to take the final examination.
- Lateness* Students who are late for any lecture or laboratory period will be marked absent unless at the end of the period in question they account satisfactorily to the instructor for their lateness.
- Illness* Students who are absent from two or more consecutive classes in a course because of illness or disability should report to their instructor upon their return to class. If the instructor requires an absence card, it will be the student's responsibility to have one certified by the Infirmary Physician, and to show it to the instructor before depositing it with the Registrar.
- Other Absence* Students who are absent from two or more consecutive classes in a course for some valid reason other than illness should report to their instructor upon their return to class. If the instructor requires an absence card, it will be the student's responsibility to have one signed by the Registrar and to show it to the instructor before depositing it with the Registrar.

TERM MARKS

<i>First-Year Courses</i>	In first-year courses a mark for each student will be reported to the Registrar's Office at the close of the first term. This mark may be computed on the basis of one or more tests or essays or in any way that the instructor may consider satisfactory.
<i>Senior Courses</i>	In senior courses the holding of term examinations is at the discretion of the department concerned.
<i>Distribution of Credits</i>	In each course in which a final examination is held, credit of not less than 30% and not more than 70% will be assigned to term work. The remaining credit in each course will be assigned to the final examination. At the beginning of the session, announcement will be made by each instructor as to the procedure in each case and the distribution of credit. The percentage of term marks carried forward to a supplemental examination will be determined by the Department and Faculty concerned.
<i>Absence from Term Examinations</i>	If the student has an unexcused absence from a term examination or test, the mark assigned to him will be zero. However, in case of illness the student may be excused from writing the examination or test. In applying for exemption a student must present an absence card signed by the Infirmary Physician. When exemption is granted the percentage allotted to the examination or test missed is added to the percentage allotted to the final examination.

EXAMINATIONS

<i>Test Weeks</i>	Although instructors may give tests at any time at their discretion, one week in the middle of each term and one week between terms have been set aside as test weeks to assist in scheduling. During these weeks students will not be excused from classes for extracurricular activities.
<i>Final Examinations</i>	With certain exceptions, a final examination is held in each course. In courses completed in the first term, final examinations may be held either during the test week in January <i>under departmental supervision</i> , or at the end of the session, at the discretion of the departments concerned. All other final examinations are held at the end of the session.
<i>Absence through illness, domestic affliction, or religious conviction</i>	Any student who is ill or suffering from severe domestic affliction should advise the Registrar at once of the circumstances and apply for a deferred final examination to be written at the time of the regular supplementals. Similar action should be taken by any student, who, because of religious convictions or for other cogent reasons, is unable to write a final examination at the scheduled time. Such application will be referred to the student's Dean or Director for a final decision.

EXAMINATIONS

If a student becomes ill or receives word of domestic affliction during the course of an examination, he should report at once to the Supervisor, hand in his unfinished paper and request that it be cancelled. Thereafter, if illness is the cause, he must go directly to the Student Medical Services office so that any subsequent application for a *deferred examination* may be supported by a medical certificate. The Registrar should be notified of the circumstances in writing within 48 hours of the examination.

In certain cases the decision may be to grant a deferred final examination which will carry with it no supplemental privilege in the event of failure.

Should a student write an examination, hand in his paper for marking and later report extenuating circumstances to support his request for cancellation of his paper and for another examination, such request will not be entertained.

Debarment: A student may be refused permission to write

A student may be refused permission to write final examinations in a course, on the recommendation of the Department concerned and with the concurrence of the Dean of his Faculty, in the following circumstances:

- (i) The student has an inordinate number of unexcused absences.
- (ii) The student has neglected to do a substantial proportion of his written assignments in a course of which these are an essential feature.

Deferred Final Examination

A student who has missed a final examination because of illness or domestic affliction or who is obliged to absent himself from an examination for some other compelling reason (including religious convictions) may apply to the Registrar's Office for a deferred final examination to be written at the time of the regular supplemental examinations.

SUPPLEMENTAL EXAMINATIONS

A student who has failed in a course may be granted a supplemental examination

The number of supplemental examinations allowed to any student is determined by the Faculty Council concerned. Notification of permission which may be granted to write one or more supplemental examinations is included in the statement of marks sent to all students.

Except under special circumstances, no student who has written final examinations will be permitted to sit for a supplemental examination unless he has attained an average of at least 50% on the year's work including the failed subject or subjects.

A student granted the privilege of writing supplemental examinations must do so at the time of regular supplemental examinations next following or, if given special permission by the Dean, write the regular examinations next following.

Any student who returns to the University, having failed a supplemental examination or having neglected to write it, will be required to repeat the course. In certain cases an equivalent course may be prescribed instead of the failed course.

A student who has failed in a course in the preceding session and who has been granted a supplemental examination should apply to the Registrar not later than August 10, remitting the prescribed fee.

Supplemental examinations are conducted by the University in September of each year.

Students awaiting the outcome of a reappraisal of final examination papers should make application for supplemental examinations by the prescribed deadline. Normally there is no reappraisal privilege for supplemental examinations.

*Graduating
Students*

In certain Faculties second-class standing is required in a specified number of subjects. In others an average of at least 60% is required in the last two years of the program. Regulations governing the writing of supplemental examinations to obtain such standing are laid down by these faculties and schools in their own calendars. Subsequent to the degree examinations a member of the graduating class, who having exhausted all the regular supplemental examination privileges, has still a failure in one course only, may, with permission of the faculty concerned, register in and repeat that course extramurally unless in the opinion of the department concerned a second attendance is necessary. A graduating student who is absent on account of illness from, or who fails in a first term final examination may be allowed a supplemental examination at the end of the session; applications for such examination must be made not later than March 2.

*Absence from
Deferred Final
or
Supplemental
Examinations*

Special supplemental and special deferred final examinations may be granted to students who are prevented by illness (attested by a physician), domestic affliction or other extreme circumstances from writing at the regular time.

*Requests for
Reappraisal*

Since great care is taken in marking of final examination papers, a student should apply for reappraisal of a paper only if he has good reason to believe that a mistake has been made. Reappraisals are dealt with by the head of the department in consultation with members of the staff. A request for reappraisal must be made by letter to the Registrar within thirty days after the publication of results, accompanied by a fee of \$10.00 for each paper; the fee will be refunded if the mark is raised from a failure to a pass, or from Class III to Class II, or from Class II to Class I, or by at least 5% within a passing grade.

The reappraisal privilege is limited to two papers in any one year. Normally there is no such privilege for supplemental examinations.

ACADEMIC STANDING

Special supplemental and special deferred final examinations may be written in September. In certain approved cases they may be written during other regular examination periods. In each case, application must be made a full month before the examination is to be written.

Examination Results

After the examination papers have been marked at the end of each session and the final results computed, they must be reviewed by the faculties and recorded in the permanent records before an individual statement can be sent to each student at the home address specified on his registration. As this process is time-consuming, students should not expect to receive their statements of marks until about June 15.

ACADEMIC STANDING

Grading System

Students' marks are graded as follows: 80% and over, Class I; 65% to 79%, Class II; 50% to 64%, Class III. For students proceeding toward an undergraduate degree the pass mark is 50% unless otherwise specified; in courses taken toward a graduate degree the pass mark is 65%.

Academic Honors

First-Class Standing

First-class standing in a given year is awarded to any student who secures an average mark of not less than 80% in the work of that year.

Degrees with Honors

Honors degrees in the Faculty of Arts and Science are awarded in two classes, first-class honors and honors. For first-class honors, an average of 80% is required; for honors, 65%. In awarding honors, the entire university record of the student is considered.

Degrees with Distinction

The notation "With Distinction" will be inscribed on the permanent record and graduation parchment of a candidate for any degree, except an Honors or Graduate degree, if the candidate has obtained a weighted average of 80% or higher over the last two years of his program.

A student who has taken part of his work at another university may be granted a degree "With Distinction" at the discretion of the Faculty concerned.

Unsatisfactory Standing

The General Faculty Council may refuse permission to a student or prospective student to enter any year of any course if, in the opinion of the Council, the student shows a lack of general educational attainment. Further, a student whose record in the classroom, in tests, or in final examination is unsatisfactory, may at any time be required to withdraw from the University.

*Faculty
Revisions
Committees*

The records affecting promotion and graduation of all students in the University are reviewed at the end of each session by a Faculty Revisions Committee. A student whose record is then unsatisfactory will be notified by his Dean or Director and will be referred to Student Counselling Services for counselling. He may be denied supplemental examinations and may be required to repeat his year.

A student whose record is extremely unsatisfactory may be required to withdraw from the University and in any event will not be permitted to re-enter without counselling. Such a student who seeks re-admission to the University must report his intention by letter to the Director, Student Counselling Services, not later than August 1st.

Promotion

Full details of special promotion regulations of the various faculties and schools will be found in pages relating to the faculty or school.

*Aegrotat
Standing*

Aegrotat standing (i.e., standing granted to a candidate who is prevented by illness from attending examinations) may be granted by the Faculty Council concerned to a student registered in either of the last two years of any course, unless it be in the final year for the first degree in a combined course.

Any student wishing to take advantage of this privilege should apply to the Dean of the Faculty concerned.

*Degrees in
Absentia*

Graduands who are unable to be present at Convocation are required to give notice in writing of their intention to be absent. This notice must be received by the Registrar by the date and hour indicated in the Academic Schedule. Any student who fails to give notice as required will be assessed a penalty of \$10.00 prior to release of his or her parchment. A graduand may be excused from the payment of this fee if his absence without notice is due to sudden illness, accident, domestic affliction or other reason deemed valid by the Registrar.

Appeals

A student may present an appeal to the respective Council or Administrative Committee concerned through the Dean or Director.

The General Faculty Council has power to hear and determine appeals from the decisions of the Faculty Council upon application by members or by students and others. Such appeals should be addressed to the Registrar.

PHYSICAL EDUCATION

Service Program

It is the aim of the School of Physical Education to make a major contribution toward the physical, mental and social life of each student through instruction and participation in physical and recreational activities.

All first-year students are required to take two hours of physical education per week. Those excepted from this regulation are:

1. students declared physically unfit by the University of Medical Services;
2. students over 25 years of age.

Individual lockers, locks, towels and shower facilities are available for all students. The program is conducted in the University Gymnasium.

The prescribed gymnasium costume is:

Women:

Shorts (red)
T-shirt (white)
Socks (white)
Running shoes (white)

Men:

Shorts
T-shirts
Running shoes

Shorts and T-shirts may be purchased at the University Bookstore.

Intramural

The School of Physical Education, in conjunction with the Intramural Councils, offers opportunities for all students to participate in a wide variety of athletic and recreational activities.

Intramural activities for men include rugger, touch football, soccer, volleyball, basketball, hockey, swimming, badminton, cross-country, tennis and golf. Women may participate on an intramural basis in volleyball, basketball, swimming, badminton, tennis, golf, and bowling. In addition numerous clubs operate under the jurisdiction of the University Athletic Board in such activities as fencing, judo, wrestling, dance (social, modern, and ballet), gymnastics, bowling, curling and skiing.

Intercollegiate

The University Athletic Board is responsible for conducting the intercollegiate athletic program at the University. Competition for men in the Western Canada Intercollegiate Athletic Association includes basketball, volleyball, tennis, golf, cross-country, badminton, curling, and fencing. It is expected that hockey and football, as well as swimming, gymnastics, and wrestling, will be included in this program in the near future. Co-eds have an opportunity to participate in the WCIAA in tennis, golf, volleyball, basketball, fencing, curling and bowling.

OFFICER TRAINING UNITS

University Naval Training Division

The purpose of the University Naval Training Divisions is to select and train university students for commissioned rank in the Royal Canadian Navy (Reserve).

Canadian Officers Training Corps

(University of Alberta Contingent)

The purpose of the Canadian Officers Training Corps program is to provide a means whereby university undergraduates can qualify for appointments in the Canadian Army, Regular Force or Reserves, as a commissioned officer.

Royal Canadian Air Force

(University Squadron)

R.C.A.F. University Squadrons were formed at the major Canadian universities to promote a strong liaison and mutual understanding between the universities and the Royal Canadian Air Force. These squadrons will provide a flow of trained university graduates into the R.C.A.F. Regular or Reserve as commissioned officers.

For further information see the Awards and Financial Assistance section of this Calendar, or the Registrar's Office.

Regular Officer Training Plan (ROTP)

Students enrolled at the University under the R.O.T.P. have already selected the Armed Forces as a permanent career. Detailed information may be secured from Naval, Army, or Air Force Recruiting Units, Calgary Public Building.

PART IV

The Faculty of Arts and Science

The Faculty of Arts and Science offers honors courses and general courses leading to the degrees of Bachelor of Arts (B.A.), Bachelor of Science (B.Sc.), Bachelor of Music in Performance (B.Mus.), and Bachelor of Science in Household Economics (B.Sc.H.Ec.). It is associated with the Faculty of Law in courses leading to the combined degrees of Bachelor of Arts (B.A.) and Bachelor of Laws (LL.B.).

GENERAL REGULATIONS

Admission The admission requirements for the courses leading to the various degrees are presented in detail on pages 43 to 152.

Matriculation Deficiency Certain courses at the Grade XII level, numbered 100, normally offered to students who are beginning their study of a particular subject, sometimes may be taken at the university for the purpose of removing a matriculation deficiency. With the consent of the Dean, students with good High School records may be allowed to take one such course. They must satisfy the general matriculation requirements in every other respect, and present evidence that the matriculation course needed for University entrance was not available in their school. When taken for this purpose, such a course will not count toward a University degree.

Students of mature age whose high school preparation has not been regular may in certain circumstances be excused from presenting a high school diploma. Such students should apply to the Registrar for specific information.

Promotion To be granted the B.A. or B.Sc. degree a student must obtain a passing mark or better in fifteen courses and obtain an average of 60 percent in all courses credited toward the degree after the first year.

Number of Courses Except by special permission of the Council of the Faculty, no student under its jurisdiction may offer for credit in any period of twelve months from September 1 to August 31 more than five courses either in the regular winter session from September to April or in both the winter and the summer session.

No student may offer for credit in any period of twelve consecutive months more than three courses taken by a combination of Summer Session, Evening Credit, late afternoon classes, or extramural study.

Duration No candidate for the Bachelor's degree in the Faculty of Arts and Science will be recommended to the General Faculty Council for the award of the degree until three regular academic sessions, September to April, have elapsed from the date of registration in the first year.

GENERAL REGULATIONS

Residence

Students proceeding to a Bachelor's degree in the Faculty of Arts and Science will be required to complete a program of normal weight in at least one regular academic session, September to April.

Exceptions may be made to this rule in the cases of teachers who have had at least two years' experience subsequent to receiving their permanent certificates. Such students may meet the requirements for the degree of Bachelor of Arts or Bachelor of Science by attendance at summer sessions only. They are warned that the University cannot undertake to offer in summer sessions all the courses which may be desired for the B.A. degree or required for the B.Sc. degree.

Patterns

Students registering for the first year of the B.A. and B.Sc. degrees will select a particular subject of concentration, and will register either in the pattern of the general course or in the honors program as prescribed for that subject.

The term "option," where it appears, should be construed as a course freely chosen by the student, provided that he has any necessary prerequisites or corequisites. An "approved option" should be construed as an option approved by the department directing the program of the student concerned.

Changes

A student need not commit himself in his first year, and may register in the appropriate pattern of the first year of the general course. If he obtains a sufficiently high standing and is recommended by the department concerned, he may then commence the corresponding honors program in the second year.

Students may change from one pattern to another with permission of the Dean.

In their second and third years students will register as prescribed for the pattern selected in the first year, and their choice of courses must be approved by the department in which they are concentrating.

Course Distribution B.A.—Division C

B.A. students must select three C Division courses which must include at least one biological science and one physical science or mathematics or statistics. A student may not include both Biology 341 and Botany 201 or Zoology 220 in his program, nor may he include more than one of Physical Science 341 and Physics 100 or 200.

The Division C courses for the First Year should be one of: Astronomy 253, Botany 201, Zoology 220, Chemistry 130, Chemistry 230, Physics 100, Physics 200, Mathematics 111 and 211 (formerly 200 or 201), 211 (formerly 201) or 260, Geology 201, Geography 201, Statistics 265 (formerly 255).

GENERAL REGULATIONS

Course Distribution

In the second and third years of the B.Sc. patterns students are required to select one from the following list:

B.Sc.— Division A or B

Classics 381 (352), 385 (353) or 356.	Any Foreign Language course other than a beginning course.
Classics 382 (350) or 351 or Classics 354.	Any senior B division Geography course.
Economics 310 or 330.	Philosophy 241 (240), 261 (260), 350, 352, 354, 360.
Linguistics 400	Any senior Political Science course.
Any senior English course.	Psychology 202.
Any senior course in Fine Arts.	Any Sociology course.
Any senior History course.	

Written permission from the Dean's office must be obtained for registration in any course not listed above.

Language Requirement

Students taking a foreign language in the University will normally continue to study the language of matriculation. Students planning to enter theology may elect Greek 100 as the foreign language of any pattern.

Supple- mentals

A student will not be allowed to write more than five supplemental examinations for the purpose of obtaining passing marks or raising his average to the required 60 percent.

A student will not be allowed to write more than two supplemental examinations in any year.

A student who is repeating a year will be granted no supplemental privileges in the courses taken that year and must pass all courses with a 60 percent average to be allowed to continue.

Repeating

The privilege of repeating a year will be granted to a student not more than once during his candidacy for a degree in this Faculty, unless by special permission of the Dean.

GENERAL DEGREE

<i>Definition</i>	The general program leads to a B.A. or B.Sc. degree in three years. It is designed to give students a general education, with a certain amount of concentration on one or two subjects.
<i>Graduation</i>	Students who completed their programs before November, 1962, but failed to graduate because of lack of second-class standings will normally be required to satisfy the requirements of six second-class standings. Students registered in their second or third years in the 1962-63 Session may be considered by the Revisions Committee either under the 60% average requirement or that of the six second-class standings.
<i>Patterns</i>	Effective September 1, 1963, in Edmonton, and 1964 in Calgary, the general course program will undergo some modification. The present patterns system will be replaced by a program which includes certain compulsory subjects and provides for areas of concentration. All students registering for the first time on the above dates will be required to complete the new program. Students registering now, however, will be able to complete their degrees according to the present patterns, but may, after these dates, change to the new program if they find it to their advantage.
<i>Course Distribution</i>	<p>Normally, not more than two courses may be taken in any one department in any given year and not more than five courses in any one department during the three years of the general course.</p> <p>In special cases, the Dean may permit a student to take three courses in one department, or division of a department, in the final year, making a total of six courses in the same department or division thereof.</p>
<i>Language Requirements</i>	In the first year of the B.Sc. patterns, the foreign language of matriculation may be substituted for English 240, provided English 240 is taken in the second year.
<i>Continuity</i>	Students who interrupt their degree program in the Faculty of Arts and Science are warned that after an absence of two calendar years from academic study at University level, they may be required to comply with any new regulations which may have come into effect in regard to their program and requirements. If the absence has been of more than five years' duration, the student may be required to take placement tests.

GENERAL DEGREE

REQUIREMENTS FOR B.A. AND B.Sc. AFTER B.Ed.

Students who have qualified for the degree of B.Ed. may proceed to the degree of B.A. or B.Sc. If they have met the matriculation requirements of the Faculty of Arts and Science and have completed thirteen Arts and Science courses, they will be required to complete at least six senior courses in the Faculty of Arts and Science with an average of 60% in these courses. Students with incomplete matriculation for Arts and Science will be required either to remove these deficiencies or to secure credit in University courses of an equivalent standard. Students who have credit in fewer than thirteen Arts and Science courses may be required to complete additional courses. Students proposing to secure the B.A. or B.Sc. in this manner will be expected to select their subjects in conformity with one of the standard Arts and Science patterns and are advised to consult the Dean of the Faculty of Arts and Science about their programs.

REQUIREMENTS FOR B.A. AFTER B.Sc., AND B.Sc. AFTER B.A.

Students who have qualified for the degree of B.A. may proceed to the degree of B.Sc. in this Faculty; those who have qualified for the B.Sc. in this Faculty may proceed to the B.A. Students proposing to secure the B.A. or B.Sc. in this manner will be required to complete a 9-course program conforming to one of the standard Arts and Science patterns, with an average of 60% in these courses. Students with incomplete matriculation for the second degree will be required either to remove the deficiencies or to secure credit in University courses of an equivalent standard.

- Definition* The honors programs in the Faculty of Arts and Science lead to the B.A. or B.Sc. degree "with honors" in a particular subject or subjects, in four years from Senior matriculation. They are designed to provide specialization in that subject or subjects together with a longer training than in the general course, as well as the higher standard suggested by the term "honors."
- Not all departments in Calgary can offer full honors programs. Students must consult each department concerned for information.
- Administration* The courses in honors are administered by the Dean and the Committee on Honors of the Faculty of Arts and Science.
- Admission* Permission to take a first-year honors program is granted to students with high matriculation standing and with the approval of the Dean and the department in which he plans to specialize. Application for this privilege should be made through the head of the department at the time of registration.
- Students with satisfactory standing may proceed from the first year in a pattern of the general course to the second year of the honors program. A student desiring to do so must apply through the head of the department to the Dean, preferably during his first year and not later than the time of registration for his second year.
- Continuity* An Honors program may be interrupted only by special permission of the Council of the Faculty upon the recommendation of the Committee on Honors.
- Patterns* A student with approved qualifications may proceed, under the supervision of one of the departments, to the degree of Bachelor of Arts or Bachelor of Science with honors, by following a course of study which is largely concentrated on one or two subjects.
- Some departments provide a special first-year program for students who wish to take honors, although in most departments the difference between the honors program and the general course does not appear until the second year.
- Course Distribution* A student is not permitted to confine his studies to one of divisions A, B, C but must, during his first three years, take at least three courses outside the division to which his honors subject belongs.
- In the third and fourth years a good deal of latitude is permitted in order to meet the needs of individual students. A student may choose whether to concentrate closely on one subject or to widen his field of study. In the latter case he will not be required to take, over the four years, more than ten courses in the subject of concentration.

HONORS DEGREE

Half-Year Courses

Students in their second and third years may, under certain conditions, replace a full-year course by two half-year courses. If the full-year course is an open option, it may be replaced by any two half-year courses. If the full-year course is an option to be chosen from one of the Divisions A, B, or C, then the two half-year courses must both be chosen from that division.

Promotion

Promotion from first year to second year, as well as from second to third and third to fourth, is by recommendation of the department concerned, for which an average of 65% or higher is usually required.

Transfer

A student who, in his first year, fails to make the standing necessary for continuance in honors, or decides not to attempt honors, must continue in an appropriate pattern of the general course and must subsequently complete all the requirements of that pattern.

A student who is not recommended to continue honors at the end of his third year, or who fails to complete the requirements for honors in his fourth year, will be granted a pass degree forthwith, provided that the courses he has taken and the standing attained therein comply with the general regulations for the general course. Otherwise he may be required to take one or more additional courses in a subsequent summer or winter session.

A student who, for any reason, is unable to return for the fourth year may apply for a pass degree under the same conditions.

The courses in the Faculty of Arts and Science in Calgary are classified in three divisions:

Division A—Fine Arts, Languages and Literature

Division B—Social Sciences

Division C—Physical and Biological Sciences, Mathematics and Statistics.

Some departments offer courses in more than one division.

Lists of the first year courses in each division follow. A detailed description of the courses themselves appear in Part VII of this Calendar.

COURSE DIVISIONS

DIVISION A (Humanities)

			<i>Hours</i>	
			<i>Lecture</i>	<i>Laboratory</i>
Art 200	— Introduction to the History of Art	3		0
Art 230	— Fundamentals of Design	1		4
Art 240	— Fundamentals of Drawing	3		3
Art 250	— Fundamentals of Painting (Prerequisite: Art 240 and 230)	3		3
English 240	— Survey of English Literature	3		0
French 200	— First Year University French (Prerequisite: Grade XII French 30)	3		1
German 100	— Beginners' German	3		2
German 200	— First Year University German (Prerequisite: Grade XII German 30)	3		1
Greek 100	— Beginners' Greek	5		0
Latin 200	— Latin Authors and Prose Composition 3 (Prerequisite: Grade XII Latin 30)	3		0
Music 100	— An Introduction to Concert Music (No Prerequisite)	3		0
Music 200	— History of Music and Choral Technique (Prerequisites: a) Western Board of Music Grade III theory or equiv- alent; and b) Western Board of Music Grade V practical or equivalent)	2		3
Music 250	— Elementary Harmony and Counter- point	2		3

DIVISION B (Social Sciences)

			<i>Hours</i>	
			<i>Lecture</i>	<i>Laboratory</i>
Anthropology 202	—	Introductory Anthropology	3	1
Anthropology 220	—	North American Archeology	3	1
Economics 200	—	Principles of Economics	3	0
Geography 210	—	World Regional Geography	3	0
History 200	—	European History	3	0
History 210	—	Canada and the United States, 1492 - 1939	3	0
Philosophy 241 (240)	—	Introduction to Western Philosophy	3	1
Philosophy 261 (260)	—	Introduction to Logic, Seman- tics and Scientific Method (Not Offered 1963-64)	3	0
Political Science 200	—	Elements of Political Science	3	0
Psychology 202	—	Introduction to General Psychology	3	0
Sociology 202	—	Introductory Sociology	3	0

COURSE DIVISIONS

Division C

(Physical and Biological Sciences, Mathematics and Statistics)

			Hours	
			Lecture	Laboratory
Botany 271 (201)	—	Introductory Botany	3	3
Chemistry 230	—	Inorganic Chemistry (Prerequisite: Grade XII Chemistry 30)	3 (plus 1 hr. seminar)	3
Geography 201	—	Physical Geography	3	2
Geology 201	—	General Geology	3	3
Mathematics 211 & 111 (200)	—	Elementary Mathematics (as Mathematics 211 with addition of plane trigonometry) (Prerequisite: Grade XII Mathematics 30)	7	5
Mathematics 211 (201)	—	Elementary Mathematics (Calculus and Analytic Geometry) (Prerequisite: Grade XII Mathematics 30 and 31)	5	5
Mathematics 281 (270)	—	Algebra (Prerequisite: Grade XII Mathematics 30)	3	0
Physics 100	—	General Elementary Physics	3	3
Physics 200	—	General Physics	3	3
Statistics 215 (205)	—	Behavioral Statistics	3	3
Statistics 265 (255)	—	Elementary Statistics (Prerequisite: Grade XII Mathematics 30)	3	3
Zoology 220	—	Elementary Zoology	3	3

B.A. and B.Sc. Degrees

PROGRAMS—GENERAL DEGREES

ART

B.A. DEGREE

The General B.A. Degree is a three-year program. All three years in Art may be taken at U.A.C.

Admission (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.

(2) Four of these six subjects are compulsory.

(3) These six subjects must include either two sciences or two languages.

(4) A minimum average of 60% in these six subjects (that is, at least 360 marks) is required.

English 30	Social Studies 30	Mathematics 30	Mathematics 31	Chemistry 30	Physics 30	Biology 32	French 30 German 30 Latin 30
C	C	C		O	O	O	C O

<i>First Year Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. Art 240 — Fundamentals of Drawing or Art 250 — Fundamentals of Painting (prerequisite: Art 230 or Art 240)	3	3
2. English 240 — Survey of English Literature	3	0
3. French 200 — First-year University French (prerequisite: Grade XII French 30) or German 200 — First-year University German (prerequisite: Grade XII German 30) or Latin 200 — Latin Authors and Prose Composition (prerequisite: Grade XII Latin 30)	3	1
4. History 200 — European History	3	0
5. One first-year Division C course (see page 42)		
6. Physical Education 218 (M)—Recreational Activities or Physical Education 228 (W)—Recreational Activities	0	2
	0	2

PROGRAMS—GENERAL DEGREES

Second and Third Years

ART

Second Year

- Art 300 (not offered 1963-64), or 200 or 401.
- Art 250 or 330 or 340 (not offered 1963-64), or 240.
- A senior course from Division A or B.
- An approved option.
- A science or mathematics or statistics course.

Third Year

- Art 400 (not offered 1963-64), or 200 or 401.
- Art 250 or 330 or 340 (not offered 1963-64), or 450 (not offered 1963-64) or 240.
- A senior course from Division A or B.
- An option.
- A science or mathematics or statistics course.

PROGRAMS—GENERAL DEGREES

BOTANY

B.Sc. DEGREE

The General B.Sc. Degree is a three-year program. All three years in Botany may be taken at U.A.C. There is also an Honors program.

- Admission* (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
- (2) Five of these six subjects are compulsory.
- (3) A minimum average of 60% in these six subjects (that is, at least 360 marks) is required.

C	English 30
C	Social Studies 30
C	Mathematics 30
	Mathematics 31
C	Chemistry 30
O	Physics 30
O	Biology 32
C	French 30 German 30 Latin 30

<i>First Year Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. Botany 271 formerly 201)—Introductory Botany	3	3
2. Chemistry 230—Inorganic Chemistry (prerequisite: Grade XII Chemistry 30)	3 (plus 1 hour seminar)	3
3. English 240—A Survey of English Literature	3	0
4. Zoology 220—Elementary Zoology	3	3
5. One first-year Division C course (see page 42). The department recommends Geology 201.		
6. Physical Education 218 (M)—Recreational Activities or Physical Education 228 (W)—Recreational Activities	0	2
	0	2

PROGRAMS—GENERAL DEGREES

Second and Third Years

BOTANY

Second Year

- Two approved senior Botany courses.
- Special A or B course.
- Chemistry 350.
- An approved Division C course.*

Third Year

- Two approved senior Botany courses.
- Special A or B course.
- An option.
- An approved Division C option.*

*Among Division C courses specially recommended for students in the Botany Pattern are: Physics, if not previously taken, Biochemistry 300, Genetics 351, Statistics 265 (formerly 255).

30	30	30	30	30	30	30	30	30	30
30	30	30	30	30	30	30	30	30	30
30	30	30	30	30	30	30	30	30	30
30	30	30	30	30	30	30	30	30	30
30	30	30	30	30	30	30	30	30	30
30	30	30	30	30	30	30	30	30	30
30	30	30	30	30	30	30	30	30	30
30	30	30	30	30	30	30	30	30	30
30	30	30	30	30	30	30	30	30	30
30	30	30	30	30	30	30	30	30	30

PROGRAMS—GENERAL DEGREES

CHEMISTRY

B.Sc. DEGREE

The General B.Sc. Degree is a three-year program. All three years in Chemistry may be taken at U.A.C. There is also an Honors program.

- Admission* (1) Seven subjects of Alberta Grade XII (Senior Matriculation), including Mathematics 31, are required. Mathematics 111 and 211 (formerly 200) may sometimes be substituted for Mathematics 31 by special permission.
- (2) All seven subjects are compulsory.
- (3) A minimum average of 60% in these subjects (that is, at least 360 marks in six subjects—if Mathematics 111 is approved as a substitute for Mathematics 31—or at least 420 marks in seven subjects) is required.

English 30	Social Studies 30	Mathematics 30	Mathematics 31	Chemistry 30	Physics 30	Biology 32	French 30 German 30 Latin 30
C	C	C	C	C	C		C

<i>First Year Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. Chemistry 230—Inorganic Chemistry (Prerequisite: Grade XII Chemistry 30)	3 (plus 1 hour seminar)	3
2. English 240—Survey of English Literature	3	0
3. Mathematics 211 (formerly 201) — Elementary Mathematics (Prerequisites: Grade XII Mathematics 30 and Mathematics 31) or Mathematics 211 and Mathematics 111—Trigonometry (Prerequisites: Grade XII Mathematics 30, and special permission)	5 2	0 0 (Fall term only)
4. Physics 240—Physical Properties of Matter, Heat and Sound (Corequisite: Mathematics 211; Mathematics 111 and 211 may be accepted by special permission) (Prerequisite: Grade XII Physics 30)	3	3

PROGRAMS—GENERAL DEGREES

5.	One of Botany 271 (formerly 201)—Introductory Botany	3	3
	or		
	Geography 201—Physical Geography	3	2
	or		
	Geology 201—General Geology	3	3
	or		
	Zoology 220—Elementary Zoology	3	3
6.	Physical Education 218 (M)—Recreational Activities	0	2
	or		
	Physical Education 228 (W)—Recreational Activities	0	2

Second and Third Years

CHEMISTRY

Second Year

Chemistry 350 and Chemistry 370.

Mathematics 315 (formerly 304).

One of Botany 271 (formerly 201), Geology 201, Zoology 220, Physics 340.

Special A or B course.

Third Year

Chemistry 312.

Physics 340 (if not already taken), or one of Botany 271 (formerly 201), Geology 201, Zoology 220.

Special A or B course.

An option.

An approved Division C option.

PROGRAMS—GENERAL DEGREES

ENGLISH

B.A. DEGREE

The General B.A. Degree is a three-year program. All three years in English may be taken at U.A.C. There is also an Honors program.

- Admission* (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
- (2) Four of these six subjects are compulsory.
- (3) These six subjects must include either two sciences or two languages.
- (4) A minimum average of 60% in these six subjects (that is, at least 360 marks) is required.

English 30	Social Studies 30	Mathematics 30	Mathematics 31	Chemistry 30	Physics 30	Biology 32	French 30 German 30 Latin 30
C	C	C		O	O	O	C O

Hours

First Year Program

Lecture Laboratory

- | | | |
|--|---|---|
| 1. English 240—Survey of English Literature | 3 | 0 |
| 2. French 200—First-year University French
(Prerequisite: Grade XII French 30) | 3 | 1 |
| or | | |
| German 200—First-year University German
(Prerequisite: Grade XII German 30) | 3 | 1 |
| or | | |
| Latin 200—Latin Authors and Prose Composition
(Prerequisite: Grade XII Latin 30) | 3 | 0 |
| 3. History 200—European History | 3 | 0 |
| 4. A second foreign language. That is, one other from:
French 200—First-year University French
(Prerequisite: Grade XII French 30) | 3 | 1 |
| or | | |
| German 200—First-year University German
(Prerequisite: Grade XII German 30) | 3 | 1 |
| or | | |
| Latin 200—Latin Authors and Prose Composition
(Prerequisite: Grade XII Latin 30) | 3 | 0 |
| or | | |
| German 100—Beginners' German | | |
| or | | |
| Greek 100—Beginners' Greek | | |
| or | | |
| One first-year Division B course (see page 41). | | |
| 5. One first-year Division C course (see page 42). | | |
| 6. Physical Education 218 (M)—Recreational Activities | 0 | 2 |
| or | | |
| Physical Education 228 (W)—Recreational Activities | 0 | 2 |

PROGRAMS—GENERAL DEGREES

Second and Third Years

ENGLISH

Second Year

- A science or mathematics or statistics course.
- Two senior courses from Division B not in the same department or one senior course from Division B and one senior Foreign language.
- Two senior English courses.

Third Year

- A science or mathematics or statistics course.
- A senior course from Division A or B.
- An option.
- Two senior English courses.

ENGLISH 101	ENGLISH 102	ENGLISH 103	ENGLISH 104	ENGLISH 105	ENGLISH 106	ENGLISH 107	ENGLISH 108	ENGLISH 109	ENGLISH 110
0	0	0	0	0	0	0	0	0	0

PROGRAMS—GENERAL DEGREES

ENTOMOLOGY

B.Sc. DEGREE

The General B.Sc. Degree is a three year program. Only the first year in Entomology may be taken at U.A.C. There is also an Honors program.

- Admission* (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
- (2) Five of these six subjects are compulsory.
- (3) A minimum average of 60% in these six subjects (that is, at least 360 marks) is required.

English 30	C
Social Studies 30	C
Mathematics 30	C
Mathematics 31	
Chemistry 30	C
Physics 30	O
Biology 32	O
French 30 German 30 Latin 30	C

<i>First Year Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. Botany 271 (formerly 201)—Introductory Botany	3	3
2. Chemistry 230—Inorganic Chemistry (Prerequisite: Grade XII Chemistry 30)	3	3 (plus-1 hour seminar)
3. English 240—Survey of English Literature	3	0
4. Physics 100—General Elementary Physics or Physics 200—General Physics (Prerequisite: Grade XII Physics 30)	3 3	3 3
5. Zoology 220—Elementary Zoology	3	3
6. Physical Education 218 (M)—Recreational Activities or Physical Education 228 (W)—Recreational Activities	0 0	2 2

PROGRAMS—GENERAL DEGREES

GENERAL SCIENCE

B.Sc. DEGREE

The General B.Sc. Degree is a three-year program. All three years in General Science may be taken at U.A.C.

- Admission* (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
 (2) Five of these six subjects are compulsory.
 (3) A minimum average of 60% in these six subjects (that is, at least 360 marks) is required.

English 30	Social Studies 30	Mathematics 30	Mathematics 31	Chemistry 30	Physics 30	Biology 32	French 30 German 30 Latin 30
C	C	C		C	O	O	C

Hours

First Year Program

Lecture Laboratory

1. Botany 271 (formerly 201)—Introductory Botany 3 3
 or
 Zoology 220—Elementary Zoology 3 3
2. Chemistry 230—Inorganic Chemistry 3 3
 (Prerequisite: Grade XII Chemistry 30) (plus 1 hour seminar)
3. English 240—Survey of English Literature 3 0
4. Mathematics 211 (formerly 201)—Elementary Mathematics 5 0
 (Prerequisite: Grade XII Mathematics 30 and 31)
 or
 Mathematics 211 and (formerly 200)
 Mathematics 111—Trigonometry 2 0
 (Prerequisites: Grade XII Mathematics 30, and special permission) (Fall term only)
5. Physics 100—General Elementary Physics 3 3
 or
 Physics 200—General Physics 3 3
 (Prerequisite: Grade XII Physics 30)
 or
 Physics 240—Physical Properties of Matter, Heat and Sound 3 3
 (Corequisite: Mathematics 211 (formerly 201); Mathematics 111 and 211 (formerly 200) may be accepted by special permission) Prerequisite: Grade XII Physics 30.

PROGRAMS—GENERAL DEGREES

6. Physical Education 218 (M)—Recreational Activities 02
- or
- Physical Education 228 (W)—Recreational Activities 02

Physical Education 218 (M)	02
Physical Education 228 (W)	02

Second and Third Years

GENERAL SCIENCE

Second Year

- One senior course in each of two Division C subjects begun in the first year.
- Two approved Division C options.
- Special A or B course.

Third Year

- A third course in one of the subjects of concentration followed in the first and second years.
- Two senior Division C options.
- An option.
- Special A or B course.

PROGRAMS—GENERAL DEGREES

GEOGRAPHY

B.A. DEGREE

The General B.A. Degree is a three year program. All three years in Geography may be taken at U.A.C. There is also an Honors program and a General B.Sc. program.

- Admission* (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
- (2) Four of these six subjects are compulsory.
- (3) These six subjects must include either two sciences or two languages.
- (4) A minimum average of 60% in these six subjects (that is, at least 360 marks) is required.

English 30	C
Social Studies 30	C
Mathematics 30	C
Mathematics 31	
Chemistry 30	O
Physics 30	O
Biology 32	O
French 30	C
German 30	O
Latin 30	O

<i>First Year Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. English 240—Survey of English Literature	3	0
2. Geography 201—Physical Geography	3	2
3. One first-year Division B course (see page 41). The department recommends Economics 200.		
4. One first-year Division A or B course (see pages 40, 41). The department recommends Anthropology 202, History 200 or 210, Political Science 200, and Sociology 202, although no preference is implied by this order.		
5. One first-year Division C course (see page 42). The department recommends Geology 201.		
6. Physical Education 218 (M)—Recreational Activities or Physical Education 228 (W)—Recreational Activities	0	2
	0	2

PROGRAMS—GENERAL DEGREES

Second and Third Years

GEOGRAPHY

Second Year

- Geography 300.
- Geography 301.
- An approved Division B option.
- An approved Division A or B option.
- A science or mathematics or statistics course.

Third Year

- Geography 400.
- An approved second senior geography course.
- An approved Division B option.
- An option.
- A science or mathematics or statistics course.

300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400
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PROGRAMS—GENERAL DEGREES

GEOGRAPHY

B.Sc. DEGREE

The General B.Sc. Degree is a three-year program. All three years in Geography may be taken at U.A.C. There is also an Honors program and a General B.A. program.

- Admission* (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
- (2) Four of these six subjects are compulsory.
The department recommends Mathematics 31 and Physics 30 of the options.
- (3) A minimum average of 60% in these six subjects (that is, at least 360 marks) is required.

English 30	Social Studies 30	Mathematics 30	Mathematics 31	Chemistry 30	Physics 30	Biology 32	French 30 German 30 Latin 30
C	C	C		O	O	O	C

First Year Program

Hours Lecture Laboratory

1. Botany 271 (formerly 201)—Introductory Botany 3 3
or
Zoology 220—Elementary Zoology 3 3
2. English 240—Survey of English Literature 3 0
3. Geography 201—Physical Geography 3 2
4. Geology 201—General Geology 3 3
5. One of the following courses. The department recommends Mathematics.
Mathematics 211 (formerly 201)—Elementary Mathematics 5 0
(Prerequisites: Grade XII Mathematics 30 and 31)
or
Mathematics 211 5 0
and (formerly 200)
Mathematics 111—Trigonometry (Fall term only) 2 0
(Prerequisites: Grade XII Mathematics 30, and special permission)
or
Chemistry 230—Inorganic Chemistry 3 3
(Prerequisite: Grade XII Chemistry 30) (plus 1 hour seminar)

PROGRAMS—GENERAL DEGREES

or Physics 200—General Physics (Prerequisite: Grade XII Physics 30)	3	3
or Statistics 265 (formerly 255)—Elementary Statistics (Prerequisite: Grade XII Mathematics 30)	3	3
6. Physical Education 218 (M)—Recreational Activities or Physical Education 228 (W)—Recreational Activities	0 0	2 2

Second and Third Years

GEOGRAPHY

Second Year

- Geography 300.
- Geography 301.
- An approved option in Geology.
- An approved option in Botany or Zoology.
- An approved option in Mathematics or Physics or Chemistry or Statistics.

Third Year

- Geography 400.
- Geography 303, 401, or 405.
- Special A or B course.
- An option.
- An approved Division C course.

PROGRAMS—GENERAL DEGREES

GEOLOGY

GENERAL B.Sc. DEGREE

The General B.Sc. Degree is a three year program. All three years in Geology may be taken at U.A.C. There is also an Honors program.

- Admission* (1) Seven subjects of Alberta Grade XII (Senior Matriculation), including Mathematics 31, are required. Mathematics 111 and 211 (formerly 200), may sometimes be substituted for Mathematics 31 by special permission.
- (2) All seven subjects are compulsory.
- (3) A minimum average of 60% in these subjects (that is, at least 360 marks in six subjects—if Mathematics 111 is approved as a substitute for Mathematics 31—or at least 420 marks in seven subjects) is required.

English 30	Social Studies 30	Mathematics 30	Mathematics 31	Chemistry 30	Physics 30	Biology 32	French 30 German 30 Latin 30
C	C	C	C	C	C		C

Hours

First Year Program

Lecture Laboratory

- | | | |
|--|----------------------------|---|
| 1. Chemistry 230—Inorganic Chemistry
(Prerequisite: Grade XII Chemistry 30) | 3
(Plus 1 hour seminar) | 3 |
| 2. English 240—Survey of English Literature | 3 | 0 |
| 3. Geology 201—General Geology | 3 | 3 |
| 4. Mathematics 211 (formerly 201)—Elementary Mathematics
(Prerequisites: Grade XII Mathematics 30 and Mathematics 31) | 5 | 0 |
| or
Mathematics 211 | 5 | 0 |
| and
Mathematics 111—Trigonometry (Fall term only)
(Prerequisites: Grade XII Mathematics 30, and special permission) | 2 | 0 |
| 5. Physics 240—Physical Properties of Matter, Heat and Sound (Corequisite: Mathematics 211 (formerly 201); Mathematics 111 and 211 may be accepted by special permission).
(Prerequisite: Grade XII Physics 30) | 3 | 3 |
| 6. Physical Education 218 (M)—Recreational Activities
or
Physical Education 228 (W)—Recreational Activities | 0 | 2 |
| | 0 | 2 |

GEOLOGY

Second Year

- Geology 351 and 353.
- Special A or B course.
- One of Botany 271 (formerly 201) or Zoology 220.
- Physics 340.

Third Year

- Two of Geology 454, 457, 461 and 464.
- Geology 467.
- Special A or B course.
- An option.
- Chemistry 370.

HISTORY

B.A. DEGREE

The General B.A. Degree is a three-year program. All three years in History may be taken at U.A.C. There is also an Honors program.

- Admission* (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
- (2) Four of these six subjects are compulsory.
- (3) These six subjects must include either two sciences or two languages.
- (4) A minimum average of 60% in these six subjects (that is, at least 360 marks) is required.

English 30	Social Studies 30	Mathematics 30	Mathematics 31	Chemistry 30	Physics 30	Biology 32	French 30 German 30 Latin 30
C	C	C		O	O	O	C O

<i>First Year Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. English 240—Survey of English Literature	3	0
2. History 200—European History or History 210—Canada and the United States, 1492-1939	3	0
3. One first-year Division B course (see page 41).		
4. One first-year Division A or B course (see pages 40, 41).		
5. One first-year Division C course (see page 42).		
6. Physical Education 218 (M)—Recreational Activities or Physical Education 228 (W)—Recreational Activities	0	2

HISTORY

Second Year

- Two senior History courses (courses numbered in the 300's).
- Two approved options.
- A science or mathematics or statistics course.

Third Year

- Two senior History courses (preferably courses numbered in the 400's).
- An approved option.
- An option.
- A science or mathematics or statistics course.

Q	1.000	20
C	1.000	20
	1.000	20
Q	1.000	20
Q	1.000	20
Q	1.000	20
	1.000	20
C	1.000	20
C	1.000	20
C	1.000	20

LANGUAGES

(Classical & Modern)

B.A. DEGREE

The General B.A. Degree is a three year program. All three years in Foreign Languages (Classical or Modern) may be taken at U.A.C. There are also Honors programs.

The Foreign Language patterns are generally based on two foreign languages, with the language of matriculation serving as the core. Programs must be arranged in consultation with the Department of Classics, or the Department of Modern Languages, depending on the language chosen.

- Admission* (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
- (2) Four of these six subjects are compulsory.
- (3) These four subjects must include either two sciences or two languages.
- (4) A minimum average of 60% in these six subjects (that is, at least 360 marks) is required.

English 30	Social Studies 30	Mathematics 30	Mathematics 31	Chemistry 30	Physics 30	Biology 32	French 30 German 30 Latin 30
C	C	C		O	O	O	C O

	Hours	
	Lecture	Laboratory
<i>First Year Program</i>		
1. English 240—Survey of English Literature	3	0
2. French 200—First Year University French (Prerequisite: Grade XII French 30)	3	1
or		
German 200—First Year University German (Prerequisite: Grade XII German 30)	3	1
or		
Latin 200—Latin Authors and Prose Composition (Prerequisite: Grade XII Latin 30)	3	0
3. A second foreign language. That is, one other from: French 200 or German 200 or Latin 200		
or		
German 100—Beginners' German	3	2
or		
Greek 100—Beginners' Greek	5	0
In special cases, permission may be given to take both of German 100 and Greek 100, but if such a choice is made, the student will be required to take an additional senior language course to complete degree requirements.		

PROGRAMS—GENERAL DEGREES

- 4. One first-year Division B course (see page 41).
- 5. One first-year Division C course (see page 42).
- 6. Physical Education 218 (M)—Recreational Activities 0 2
or
Physical Education 228 (W)—Recreational Activities 0 2

Second and Third Years

FRENCH

Second Year

- Two foreign language courses (in languages taken in the first year).
- A senior course from Division A (not a foreign language).
- A senior course from Division B.
- A science or mathematics or statistics course.

Third Year

- Two foreign language courses (in languages taken in the second year).
- A senior course from Division A or B.
- An option.
- A science or mathematics or statistics course.

Second and Third Years

GERMAN

Second Year

- Two foreign language courses (in languages taken in the first year).
- A senior course from Division A (not a foreign language).
- A senior course from Division B.
- A science or mathematics or statistics course.

Third Year

- Two foreign language courses (in languages taken in the second year).
- A senior course from Division A or B.
- An option.
- A science or mathematics or statistics course.

GREEK

Second Year

- Two foreign language courses (in languages taken in the first year).
- A senior course from Division A (not a foreign language).
- A senior course from Division B.
- A science or mathematics or statistics course.

Third Year

- Two foreign language courses (in languages taken in the second year).
- A senior course from Division A or B.
- An option.
- A science or mathematics or statistics course.

LATIN

Second Year

- Two foreign language courses (in languages taken in the first year).
- A senior course from Division A (not a foreign language).
- A senior course from Division B.
- A science or mathematics or statistics course.

Third Year

- Two foreign language courses (in languages taken in the second year).
- A senior course from Division A or B.
- An option.
- A science or mathematics or statistics course.

MATHEMATICS

B.A. DEGREE

The General B.A. Degree is a three year program. All three years in Mathematics may be taken at U.A.C. There is also a General B.Sc. Degree.

- Admission* (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
- (2) Four of these six subjects are compulsory.
- (3) These four subjects must include either two sciences or two languages.
- (4) A minimum average of 60% in these six subjects (that is, at least 360 marks) is required.

English 30	Social Studies 30	Mathematics 30	Mathematics 31	Chemistry 30	Physics 30	Biology 32	French 30 German 30 Latin 30
C	C	C		O	O	O	C O

<i>First Year Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. English 240—Survey of English Literature	3	0
2. Mathematics 211 (formerly 201)—Elementary Mathematics (Calculus and Analytic Geometry) (Prerequisites: Grade XII Mathematics 30 and 31)	5	0
or		
Mathematics 211 and (formerly 200)	5	0
Mathematics 111—Trigonometry (Fall term only) (Prerequisites: Grade XII Mathematics 30, and special permission)	2	0
3. Mathematics 281 (formerly 270)—Algebra (Prerequisite: Grade XII Mathematics 30)	3	0
or		
Statistics 265 (formerly 255)—Elementary Statistics (Prerequisite: Grade XII Mathematics 30)	3	3
4. One first-year Division A or B course (see pages 40, 41).		
5. One first-year Division A or B course (see pages 40, 41).		
6. Physical Education 218 (M)—Recreational Activities	0	2
or		
Physical Education 228 (W)—Recreational Activities	0	2

Second and Third Years

MATHEMATICS

Second Year

Mathematics 315 (formerly 304).

Mathematics 281 (formerly 270), or 321 (formerly 310) or Statistics
265 (formerly Statistics 255).

Three approved options from other departments.

Third Year

Mathematics 341 (formerly 330) or 371 (formerly 360) or 415 (formerly 404) or 461 (formerly Statistics 450).

Four approved options, one of which must be a biological science.

MATHEMATICS

B.Sc. DEGREE

The General B.Sc. Degree is a three-year program. All three years in Mathematics may be taken at U.A.C. There is also an Honors program.

- Admission*
- (1) Seven subjects of Alberta Grade XII (Senior Matriculation), including Mathematics 31, are required. Mathematics 111 and 211 (formerly 200) may sometimes be substituted for Mathematics 31 by special permission.
 - (2) Five of these seven subjects are compulsory.
 - (3) One of either Chemistry 30 or Physics 30 is also compulsory, and the department recommends the other subject as well.
 - (4) A minimum average of 60% in these subjects (that is, at least 360 marks in six subjects—if Mathematics 111 is approved as a substitute for Mathematics 31—or at least 420 marks in seven subjects) is required.

English 30	C
Social Studies 30	C
Mathematics 30	C
Mathematics 31	C
Chemistry 30	C
Physics 30	O
Biology 32	O
French 30 German 30 Latin 30	C

<i>First Year Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. English 240—Survey of English Literature	3	0
2. Chemistry 230—Inorganic Chemistry (Prerequisite: Grade XII Chemistry 30)	3	3 (plus 1 hour seminar)
or Physics 240—Physical Properties of Matter, Heat and Sound (Mechanics, Properties of matter, heat, wave-motion and sound) (Corequisite: Mathematics 211 (formerly 201). Mathematics 111 and 211 (formerly 200) may be accepted by special permission). (Prerequisite: Grade XII Physics 30)	3	3
3. Mathematics 211—Elementary Mathematics (Calculus and Analytic Geometry) (Prerequisites: Grade XII Mathematics 30 and 31)	5	0

PROGRAMS—GENERAL DEGREES

	or			
	Mathematics 211			
	and			
	Mathematics 111—Trigonometry	2	0	
	(Prerequisites: Grade XII Mathe-		(Fall term only)	
	matics 30, and special permission)			
4.	Mathematics 281 (formerly 270)—Algebra	3	0	
	(Prerequisite: Grade XII Mathematics			
	30)			
	or			
	Statistics 265 (formerly 255)—Elementary Statistics	3	3	
	(Prerequisite: Grade XII Mathematics			
	30)			
5.	One first-year Division C course (see page 42).			
6.	Physical Education 218 (M)—Recreational Activities	0	2	
	or			
	Physical Education 228 (W)—Recreational Activities	0	2	

Second and Third Years

MATHEMATICS

Second Year

- Mathematics 315 (formerly 304).
- Mathematics 281 (formerly 270) or 321 (formerly 310) or Statistics 265 (formerly 255).
- Special A or B course.
- Two options, at least one from Division C.

Third Year

- An approved senior Mathematics course (such as Mathematics 341 (formerly 330), 371 (formerly 360), 415 (formerly 404), 471 (formerly 460), or Statistics 461 (formerly Statistics 450)).
- Special A or B course.
- Three options, at least one from Division C.

PROGRAMS—GENERAL DEGREES

MICROBIOLOGY

B.Sc. DEGREE

The General B.Sc. Degree is a three year program. Only the first year in Microbiology may be taken at U.A.C. There is also an Honors program.

- Admission* (1) Seven subjects of Alberta Grade XII (Senior Matriculation), including Mathematics 31, are required. Mathematics 111 and 211 (formerly 200) may sometimes be substituted for Mathematics 31 by special permission.
- (2) Six of the seven subjects are compulsory.
- (3) One of either Physics 30 or Biology 32 must be chosen. Physics 30 is a prerequisite for Physics 200, a first-year option.

English 30	C
Social Studies 30	C
Mathematics 30	C
Mathematics 31	C
Chemistry 30	C
Physics 30	O
Biology 32	O
French 30 German 30 Latin 30	C

<i>First Year Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. Botany 271 (formerly 201)—Introductory Botany or Zoology 220—Elementary Zoology	3 3	3 3
2. Chemistry 230—Inorganic Chemistry (Prerequisite: Grade XII Chemistry 30)	3 (plus 1 hour seminar)	3
3. Chemistry 250—Organic Chemistry (Prerequisite: Grade XII Chemistry 30) or Physics 200—General Physics (Prerequisite: Grade XII Physics 30)	3 3	3 3
4. English 240—Survey of English Literature	3	0
5. Mathematics 211 (formerly 201)—Elementary Mathematics (Prerequisites: Grade XII Mathematics 30 and Mathematics 31)	5	0

PROGRAMS—GENERAL DEGREES

or			
Mathematics	211	5	0
and			
Mathematics	111—Trigonometry (Fall term only)	2	0
(Prerequisites: Grade XII Mathematics 30, and special permission)			
or			
Statistics	265 (formerly 255)—Elementary Statistics	3	3
(Prerequisite: Grade XII Mathematics 30)			
6. Physical Education	218 (M)—Recreational Activities	0	2
or			
Physical Education	228 (W)—Recreational Activities	0	2

PROGRAMS—GENERAL DEGREES

MUSIC

B.A. DEGREE

The General B.A. Degree is a three-year program. All three years in Music may be taken at U.A.C.

- Admission* (1) Six subjects of Alberta Grade XII (Senior Matriculation), and Western Board of Music Grade III Theory and Grade V Practical, or equivalent, are required.
- (2) Four of these six subjects are compulsory.
- (3) These four subjects must include either two sciences or two languages.
- (4) A minimum average of 60% in these six subjects (that is, at least 360 marks) is required.

English 30	Social Studies 30	Mathematics 30	Mathematics 31	Chemistry 30	Physics 30	Biology 32	French 30 German 30 Latin 30
C	C	C		O	O	O	C O

	Hours	
	Lecture	Laboratory
<i>First Year Program</i>		
1. English 240—Survey of English Literature	3	0
2. French 200—First Year University French (Prerequisite: Grade XII French 30)	3	1
or		
German 200—First Year University German (Prerequisite: Grade XII German 30)	3	1
or		
Latin 200—Latin Authors and Prose Composition (Prerequisite: Grade XII Latin 30)	3	0
3. History 200—European History	3	0
4. Music 200—History of Music and Choral Technique (Prerequisites: a. Western Board of Music Grade III Theory or equivalent; b. Western Board of Music Grade V Practical or equivalent)	2	3
5. One first-year Division C course (see page 42).		
6. Physical Education 218 (M)—Recreational Activities	0	2
or		
Physical Education 228 (W)—Recreational Activities	0	2

PROGRAMS—GENERAL DEGREES

Second and Third Years

MUSIC

Second Year

- Music 250.
- Music 300.
- A senior course from Division A or B.
- An approved option.
- A science or mathematics or statistics course.

Third Year

- Music 350 or Music 410.
- Music 400.
- A senior course from Division A or B.
- An option.
- A science or mathematics or statistics course.

PROGRAMS—GENERAL DEGREES

MUSIC

BACHELOR OF MUSIC IN PERFORMANCE (B.Mus.) DEGREE

The Bachelor of Music in Performance Degree is a three-year program.

- Admission* (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
- (2) Four of these six subjects are compulsory.
- (3) These six subjects must include either two sciences or two languages.
- (4) A minimum average of 60% in these six subjects (that is, at least 360 marks) is required.
- (5) In music subjects, the completion of Grade VIII practical and Grades IV and V theoretical of the Western Board of Music examinations or equivalent standing is a pre-requisite.

English 30	C
Social Studies 30	C
Mathematics 30	C
Mathematics 31	
Chemistry 30	O
Physics 30	O
Biology 32	O
French 30	C
German 30	O
Latin 30	

<i>First-Year Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. Music 203—Same content as Music 200 (History of Music and choral Technique (prerequisites: a, Western Board of Music Grade III Theory or equivalent; and b, Western Board of Music Grade V practical or equivalent) with the addition of a laboratory in the principles and practice of woodwind instruments)	2	6
2. Music 215—2nd Practical Subject	1	6
3. Music 225—1st Practical Subject	2	10
4. Music 250—Elementary Harmony and Counterpoint	2	3
5. English 240—Survey of English Literature	3	0
6. Physical Education 218 (M)—Recreational Activities	0	2
or		
Physical Education 228 (W)—Recreational Activities	0	2

PROGRAMS—GENERAL DEGREES

Second and Third Years

Second Year

- Music 303
- Music 315
- Music 325
- Music 353

An approved Arts and Science option.

Note: A junior recital must be presented in the first or second year.

Third Year

- Music 403.
- Music 405.
- Music 415.
- Music 425.
- Music 453.

Two approved Arts and Science options.

Note: A senior recital must be presented in the final year.

Music 303	Music 315	Music 325	Music 353	Music 403	Music 405	Music 415	Music 425	Music 453
0	0	0	0	0	0	0	0	0

PROGRAMS—GENERAL DEGREES

PHILOSOPHY

B.A. DEGREE

The General B.A. Degree is a three-year program. All three years in Philosophy may be taken at U.A.C. There is also an Honors program.

Admission (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.

(2) Four of these six subjects are compulsory.

(3) These six subjects must include either two sciences or two languages.

(4) A minimum average of 60% in these six subjects (that is, at least 360 marks) is required.

English 30	C
Social Studies 30	C
Mathematics 30	C
Mathematics 31	
Chemistry 30	O
Physics 30	O
Biology 32	O
French 30	C
German 30	O
Latin 30	

<i>First Year Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. English 240—Survey of English Literature	3	0
2. Philosophy 241 (formerly 240) — Introduction to Western Philosophy	3	1
or		
Philosophy 261 (formerly 260) — Introduction to Logic, Semantics and Scientific Method (not offered 1963-64).	3	0
3. One first-year Division B course (see page 41).		
4. One first-year Division A or B course (see pages 40, 41).		
5. One first-year Division C course (see page 42).		
6. Physical Education 218 (M)—Recreational Activities	0	2
or		
Physical Education 228 (W)—Recreational Activities	0	2

PROGRAMS—GENERAL DEGREES

Second and Third Years

PHILOSOPHY

Second Year

- An approved senior course in Philosophy.
- A senior course in Philosophy.
- An option from Division A.
- An option from Division A or B.
- A science or mathematics or statistics course.

Third Year

- Two senior courses in Philosophy.
- An option.
- A senior option from Division B.
- A science or mathematics or statistics course.

PHYSICS

B.Sc. DEGREE

The General B.Sc. Degree is a three-year program. All three years in Physics may be taken at U.A.C. There is also an Honors program.

- Admission* (1) Seven subjects of Alberta Grade XII (Senior Matriculation), including Mathematics 31, are required. Mathematics 111 and 211 (formerly 200) may sometimes be substituted for Mathematics 31 by special permission.
- (2) All seven subjects are compulsory.
- (3) A minimum average of 60% in these subjects (that is, at least 360 marks in six subjects—if Mathematics 111 is approved as a substitute for Mathematics 31—or at least 420 marks in seven subjects) is required.

English 30	C
Social Studies 30	C
Mathematics 30	C
Mathematics 31	C
Chemistry 30	C
Physics 30	C
Biology 32	O
French 30 German 30 Latin 30	C

<i>First Year Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. One of Botany 271 (formerly 201)—Introductory Botany or Geography 201 — Physical Geography or Geology 201—General Geology or Zoology 220 — Elementary Zoology	3	3
2. Chemistry 230 — Inorganic Chemistry (Prerequisite: Grade XII Chemistry 30)	3	3 (plus 1 hour seminar)
3. English 240—Survey of English Literature	3	0
4. Mathematics 211 (formerly 201)—Elementary Mathematics (Prerequisites: Grade XII Mathematics 30 and Mathematics 31) or Mathematics 211 and Mathematics 111—Trigonometry (Fall term only) (Prerequisites: Grade XII Mathematics 30, and special permission)	5 5 2	0 0 0

PROGRAMS—GENERAL DEGREES

- | | | |
|--|---|---|
| 5. Physics 240—Physical Properties of Matter, Heat and Sound (Corequisite: Mathematics 211 (formerly 201); Mathematics 111 and 211 (formerly 200), may be accepted by special permission). | 3 | 3 |
| 6. Physical Education 218 (M)—Recreational activities | 0 | 2 |
| or | | |
| Physical Education 228 (W)—Recreational Activities | 0 | 2 |

Second and Third Years

PHYSICS

Second Year

Physics 340, Mathematics 315 (formerly 304), Mathematics 321 (formerly 310)*.

An approved option from Division C.

Special A or B course.

*Physics 340 and Mathematics 321 (formerly 310) may be jointly replaced by Physics 351 (intermediate laboratory), 361 and 305 (formerly 360 and 380), provided that a second-class standing has been obtained in Physics 240 or 244 (formerly 242) and in Mathematics 211 or 211 and 111 (formerly 200 or 201).

Third Year

Two of Physics 400, or 455,** Astronomy 478,** Chemistry 370.

Mathematics 415 or 431 and 433 (formerly 404 or 421 and 442).

Special A or B course.

An option.

**Credit cannot be given for both Physics 440 and 445, or for both Astronomy 410 and 478.

POLITICAL ECONOMY—ECONOMICS

B.A. DEGREE

The General B.A. Degree is a three-year program. All three years in Economics may be taken at U.A.C. There is also an Honors program.

- Admission* (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
- (2) Four of these six subjects are compulsory.
- (3) These six subjects must include either two sciences or two languages.
- (4) A minimum average of 60% in these six subjects (that is, at least 360 marks) is required.

English 30	C
Social Studies 30	C
Mathematics 30	C
Mathematics 31	
Chemistry 30	O
Physics 30	O
Biology 32	O
French 30 German 30 Latin 30	C O

First Year Program

Hours
Lecture Laboratory

- | | | |
|---|---|---|
| 1. Economics 200—Principles of Economics | 3 | 0 |
| 2. English 240—Survey of English Literature | 3 | 0 |
| 3. One first-year Division C course (see page 42).
or
Accounting 200 | | |
| 4. One first-year Division A or B course (see pp. 40, 41). | | |
| 5. One first-year Division B course (see page 41). | | |
| 6. Physical Education 218 (M)—Recreational Activities
or
Physical Education 228 (W)—Recreational Activities | 0 | 2 |
| | 0 | 2 |

PROGRAMS—GENERAL DEGREES

Second and Third Years

ECONOMICS

Second Year

- Economics 300.
- An approved senior Economics course (preferably Economics 340).
- Two approved options, one of which may be a Political Science course.
- A science or mathematics or statistics course or Accounting 200.

Third Year

- Two approved senior courses in Economics (one of these must be Economics 340 if it was not taken in the second year).
- An approved option, which may be a Political Science course.
- An option.
- A science or mathematics or statistics course or Accounting 200.

PROGRAMS—GENERAL DEGREES

POLITICAL ECONOMY—POLITICAL SCIENCE

B.A. DEGREE

The General B.A. Degree is a three-year program. All three years in Political Science may be taken at U.A.C. There is also an Honors program.

- Admission* (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
- (2) Four of these six subjects are compulsory.
- (3) These six subjects must include either two sciences or two languages.
- (4) A minimum average of 60% in these six subjects (that is, at least 360 marks) is required.

English 30	Social Studies 30	Mathematics 30	Mathematics 31	Chemistry 30	Physics 30	Biology 32	French 30 German 30 Latin 30
C	C	C		O	O	O	C O

First Year Program

Hours Lecture Laboratory

- | | | |
|---|---|---|
| 1. English 240—Survey of English Literature | 3 | 0 |
| 2. Political Science 200—Principles of Political Science | 3 | 0 |
| 3. One first-year Division B course (see page 41). | | |
| 4. One first-year Division A course (see page 40).
or
One first-year Division B course (see page 41). | | |
| 5. One first-year Division C course (see page 42). | | |
| 6. Physical Education 218 (M)—Recreational Activities | 0 | 2 |
| or
Physical Education 228 (W)—Recreational Activities | 0 | 2 |

POLITICAL SCIENCE

Second Year

- Two approved courses in Political Science.
- Two approved options, one of which may be an Economics course.
- A science or mathematics or statistics course.

Third Year

- Two approved Political Science courses.
- An option.
- An approved option, which may be an Economics course.
- A science or mathematics or statistics course.

PS 101	PS 102	PS 103	PS 104	PS 105	PS 106	PS 107	PS 108
○	○	○	○	○	○	○	○

PSYCHOLOGY

B.A. DEGREE

The General B.A. Degree is a three-year program. All three years in Psychology may be taken at U.A.C. There is also an Honors program. See B.Sc. (Experimental Psychology) also.

- Admission* (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
- (2) Four of these six subjects are compulsory.
- (3) These six subjects must include either two sciences or two languages.
- (4) A minimum average of 60% in these six subjects (that is, at least 360 marks) is required.

English 30	Social Studies 30	Mathematics 30	Mathematics 31	Chemistry 30	Physics 30	Biology 32	French 30 German 30 Latin 30
C	C	C		O	O	O	C O

<i>First Year Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. English 240—Survey of English Literature	3	0
2. Psychology 202—Introduction to General Psychology	3	0
3. One first-year Division B course (see page 41).		
or		
French 200—First Year University French (Prerequisite: Grade XII French 30)	3	1
or		
German 200—First Year University German (Prerequisite: Grade XII German 30)	3	1
or		
Latin 200—Latin Authors and Prose Composition (Prerequisite: Grade XII Latin 30)	3	0
4. One first-year Division A or B or C course (see pages 40, 41, 42). The department recommends one of Anthropology 202; Philosophy 241 (formerly 240) or 261 (formerly 260) (not offered 1963-64); Sociology 202; Statistics 215 (formerly 205); or Zoology 220.		
5. One first-year Division C course (see page 42). The department recommends Statistics 215; or Zoology 220, if not chosen as the option under No. 4 above.		
6. Physical Education 218 (M)—Recreational Activities	0	2
or		
Physical Education 228 (W)—Recreational Activities	0	2

PSYCHOLOGY

Second Year

- A senior psychology course.
- Two approved options, one of which may be a psychology course.
- An option from Division A or B.
- A science or mathematics or statistics course.

Third Year

- A senior psychology course.
- Two approved senior options, one of which may be a psychology course.
- A senior option from Division A or B.
- A science or mathematics or statistics course.

PROGRAMS—GENERAL DEGREES

EXPERIMENTAL PSYCHOLOGY

B.Sc. DEGREE

The General B.Sc. Degree is a three-year program. All three years in Experimental Psychology may be taken at U.A.C. There is also an Honors program. See B.A. (Psychology) also.

- Admission* (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
- (2) Four of these six subjects are compulsory.
- (3) A minimum average of 60% in these six subjects (that is, at least 360 marks) is required.

English 30	Social Studies 30	Mathematics 30	Mathematics 31	Chemistry 30	Physics 30	Biology 32	French 30 German 30 Latin 30
C	C	C		O	O	O	C

First Year Program

Hours Lecture Laboratory

- | | | |
|--|---|----------------------------|
| 1. One of Chemistry 230—Inorganic Chemistry
(Prerequisite: Grade XII Chemistry 30) | 3 | 3
(plus 1 hour seminar) |
| or
Chemistry 250—Organic Chemistry
(Prerequisite: Grade XII Chemistry 30) | 3 | 3 |
| or
Mathematics 111 and 211 (formerly 200)—Elementary Mathematics as Mathematics 211 (formerly 201) with addition of plane trigonometry)
(Prerequisite: Grade XII Mathematics 30) | 5 | 2 |
| or
Mathematics 211 (formerly 201)—Elementary Mathematics
(Prerequisites: Grade XII Mathematics 30 and 31) | 5 | 0 |
| or
Physics 100—General Elementary Physics | 3 | 3 |
| or
Physics 200—General Physics
(Prerequisite: Grade XII Physics 30) | 3 | 3 |
| 2. English 240—Survey of English Literature | 3 | 0 |
| 3. Psychology 202—Introduction to General Psychology | 3 | 0 |

PROGRAMS—GENERAL DEGREES

4. Statistics 215 (formerly 205)—Behavioural Statistics	3	3
5. Zoology 220—Elementary Zoology	3	3
6. Physical Education 218 (M)—Recreational Activities	0	2
or		
Physical Education 228 (W)—Recreational Activities	0	2

Second and Third Years

EXPERIMENTAL PSYCHOLOGY

Second Year

Psychology 460.

Two approved courses in science or mathematics or statistics.

A course in genetics or physiology or zoology or biochemistry.

Special A or B course.

Third Year

A senior psychology course.

An approved course in biochemistry or genetics or physiology or zoology.

An approved option, which may be a course in psychology.

An option.

Special A or B course.

PROGRAMS—GENERAL DEGREES

SOCIOLOGY

B.A. DEGREE

The General B.A. Degree is a three-year program. All three years in Sociology may be taken at U.A.C. There is also an Honors program.

Admission (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.

(2) Four of these six subjects are compulsory.

(3) These four subjects must include either two sciences or two languages.

(4) A minimum average of 60% in these six subjects (that is, at least 360 marks) is required.

English 30	C
Social Studies 30	C
Mathematics 30	C
Mathematics 31	
Chemistry 30	O
Physics 30	O
Biology 32	O
French 30 German 30 Latin 30	C
	O

First Year Program

Hours Lecture Laboratory

1. English 240—Survey of English Literature 3 0

2. Sociology 202—Introductory Sociology 3 0

3. One first-year Division A or B or C course (see pages 40, 41, 42).

The following Division B courses are recommended by the department: Anthropology 202; Economics 200; History 210; Philosophy 241 (formerly 240) or 261 (formerly 260), (not offered 1963-64); Political Science 200; or Psychology 202.

The following Division C courses are recommended by the department: Mathematics 111 and 211 (formerly 200)—Prerequisite Grade XII Mathematics 30; Mathematics 211 (formerly 201) — Prerequisite Grade XII Mathematics 30 and 31; or Statistics 215 (formerly 205).

4. One first-year Division B course (see page 41).

The following Division B courses are recommended by the department: Anthropology 202; Economics 200; History 210; Philosophy 241 (formerly 240) or 261 (formerly 260) (not offered 1963-64); Political Science 200; or Psychology 202.

PROGRAMS—GENERAL DEGREES

5. One first-year Division C course (see page 42).
The following Division C courses are recommended by the department: Mathematics 111 and 211 (formerly 200)—Prerequisite Grade XII Mathematics 30; Mathematics 211 (formerly 201)—Prerequisite Grade XII Mathematics 30 and 31; or Statistics 215 (formerly 205).
6. Physical Education 218 (M)—Recreational Activities 0 2
or
Physical Education 228 (W)—Recreational Activities 0 2

Second and Third Years

SOCIOLOGY

Second Year

- A Sociology course (open option from Sociology).
- Approved Sociology option.
- An option from Division A or B.
- An option from Division B.
- A science or mathematics or statistics course.

Third Year

- An approved Sociology option (400-level course).
- A Sociology option (open).
- A senior option from Division B.
- An open option.
- A science or mathematics or statistics course.

ZOOLOGY

B.Sc. DEGREE

The General B.Sc. Degree is a three-year program. All three years in Zoology may be taken at U.A.C. There is also an Honors program.

- Admission* (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
 (2) Five of these six subjects are compulsory.
 (3) A minimum average of 60% in these six subjects (that is, at least 360 marks) is required.

English 30	C
Social Studies 30	C
Mathematics 30	C
Mathematics 31	
Chemistry 30	C
Physics 30	O
Biology 32	O
French 30 German 30 Latin 30	C

<i>First Year Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. Botany 271 (formerly 201)—Introductory Botany	3	3
2. Chemistry 230—Inorganic Chemistry (Prerequisite: Grade XII Chemistry 30)	3 (plus 1 hour seminar)	3
3. English 240—Survey of English Literature	3	0
4. Mathematics 211 (formerly 201)—Elementary Mathematics (Prerequisites: Grade XII Mathematics 30 and Mathematics 31)	5	0
or		
Mathematics 211	5	0
and		
Mathematics 111—Trigonometry (Fall term only) (Prerequisites: Grade XII Mathematics 30, and special permission)	2	0
or		
Statistics 265 (formerly 255)—Elementary Statistics	3	3
or		
Geology 201—General Geology	3	3
5. Zoology 220—Elementary Zoology	3	3
6. Physical Education 218 (M)—Recreational Activities	0	2
or		
Physical Education 228 (W)—Recreational Activities	0	2

PROGRAMS—GENERAL DEGREES

Second and Third Years

ZOOLOGY

Second Year

- Zoology 300 or 350.
- Chemistry 350.
- Physics 100 or 200.
- An A or B option.
- An approved Division C option.

Third Year

- Zoology 300 or 350.
- Another senior Zoology course.
- An A or B option.
- An approved Division C option.
- An option.

B.A. and B.Sc. Degrees

HONORS DEGREES

BIOCHEMISTRY

B.Sc. DEGREE

The Honors B.Sc. Degree in Biochemistry is a four-year program. A separate application for admission must be made to the Committee on Honors, Faculty of Arts and Science.

The complete Honors program in Biochemistry is *not* available at U.A.C. Transfer to the Edmonton campus is required *after* the second year. In the Honors program in Biochemistry, opportunity will be given in the choice of options for concentration in various areas of Biochemistry.

- Admission* (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
- (2) Five of these six subjects are compulsory.
- (3) Permission to take an honors program is granted only to students with high matriculation standings.

English 30	C
Social Studies 30	C
Mathematics 30	C
Mathematics 31	O
Chemistry 30	C
Physics 30	O
Biology 32	O
French 30 German 30 Latin 30	C

		<i>Hours</i>	
		<i>Lecture</i>	<i>Laboratory</i>
<i>First-Year Honors Program</i>			
1. Botany 271 (formerly 201)—Introductory Botany or Zoology 220 — Elementary Zoology		3	3
2. Chemistry 230—Inorganic Chemistry (Prerequisite: Grade XII Chemistry 30)		3 (plus 1 hour seminar)	3
3. Chemistry 250—Organic Chemistry (Prerequisite: Grade XII Chemistry 30)		3	3
4. English 240—Survey of English Literature		3	0
5. Mathematics 211 (formerly 201)—Elementary Mathematics (Prerequisites: Grade XII Mathematics 30 and Mathematics 31) or Mathematics 211 and Mathematics 111—Trigonometry (Fall term only) (Prerequisites: Grade XII Mathematics 30, and special permission)		5 5 2	0 0
6. Physical Education 218 (M)—Recreational Activities or Physical Education 228 (W)—Recreational Activities		0 0	2 2

HONORS DEGREES

Second, Third & Fourth Years

BIOCHEMISTRY

- Second Year: Biochemistry 300
 Chemistry 370
 Physics 240
 Mathematics 315 (formerly 304)
 An Arts option (German 210 recommended)
- Third Year: Two senior half courses in Biochemistry
 Chemistry 312
 Physiology 361 *or* Botany 320
 Physics 340
 An Arts option.
- Fourth Year: Biochemistry 501
 Two senior half courses in Biochemistry
 Chemistry 450 *or* 550
 Two approved options

Students wishing to major in Plant Biochemistry must take Botany 271 (formerly 201) in the first year, Botany 320 in the third year, and elect Plant Biochemistry in the third and/or fourth years. Recommended options for fourth year include: Chemistry 551, 555, 571, 575, 579, 585; Biometrics 454, Genetics 351, Microbiology 360.

Students are advised to have a reading knowledge of French, German or Russian.

Attendance at the departmental seminars is required in fourth year.

Students may be required to take a comprehensive oral examination at the end of the fourth year.

If students taking Honors Biochemistry choose Chemistry 312 *and* 370 in their second year instead of Biochemistry 300 and Chemistry 370, and then take Biochemistry 300 in the third year and not Chemistry 312, Honors Biochemistry students can do the first two years in Calgary. Otherwise only the first year of this program is possible in Calgary.

HONORS DEGREES

BOTANY

B.Sc. DEGREE

The Honors B.Sc. Degree in Botany is a four-year program. A separate application for admission must be made to the Committee on Honors, Faculty of Arts and Science.

Complete Honors programs are not yet available in all departments in the Faculty of Arts and Science, U.A.C. Applicants for the Honors program in Botany should consult the Head of the Department.

- Admission*
- (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
 - (2) Five of these six subjects are compulsory.
 - (3) Permission to take an honors program is granted only to students with high matriculation standings.

C	English 30
C	Social Studies 30
C	Mathematics 30
	Mathematics 31
C	Chemistry 30
O	Physics 30
O	Biology 32
C	French 30 German 30 Latin 30

<i>First Year's Honors Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. Botany 271 (formerly 201)—Introductory Botany	3	3
2. Chemistry 230—Inorganic Chemistry (Prerequisite: Grade XII Chemistry 30)	3 (plus 1 hour seminar)	3
3. Geology 201—General Geology	3	3
4. Zoology 220—Elementary Zoology	3	3
5. One first-year Division A or B Course (see pp. 40, 41).		
6. Physical Education 218 (M)—Recreational Activities or Physical Education 228 (W)—Recreational Activities	0 0	2 2

HONORS DEGREES

Second, Third & Fourth Years

BOTANY

Second Year: Two senior courses in Botany
Chemistry 350
An option from Division C
An option from Division A or B.

Third Year: Two senior courses in Botany
An option from Division A or B
Two Division C options

Fourth Year: Two advanced courses in Botany
Two Division C options

Options are to be selected in consultation with the Department. Students are strongly advised to include within their program of studies some of the following subjects in addition to those named in the honors program: Genetics, Microbiology, Geography, Statistics.

Candidates may be given one or more special examinations in Botany at the end of the fourth year.

Attendance at the weekly one-hour seminar, Botany 420, is required in the third and fourth years.

Students are required to make themselves acquainted with Canadian plants by collecting and reading during the summer months.

Some form of financial assistance is usually available during the inter-session.

CHEMISTRY

B.Sc. DEGREE

The Honors B.Sc. Degree in Chemistry is a four-year program. A separate application for admission must be made to the Committee on Honors, Faculty of Arts and Science.

The complete Honors program in Chemistry is available at U.A.C.

- Admission* (1) Seven subjects of Alberta Grade XII (Senior Matriculation) are required.
- (2) Six of these seven subjects are compulsory.
- (3) Permission to take an honors program is granted only to students with high matriculation standing.

English 30	Social Studies 30	Mathematics 30	Mathematics 31	Chemistry 30	Physics 30	Biology 32	French 30 German 30 Latin 30
C	C	C	C	C	O	O	C

First-Year Honors Program

Hours
Lecture Laboratory

- | | | |
|--|---|----------------------------|
| 1. English 240—Survey of English Literature | 3 | 0 |
| 2. Chemistry 230—Inorganic Chemistry
(Prerequisite: Grade XII Chemistry 30) | 3 | 3
(plus 1 hour seminar) |
| 3. Chemistry 250—Organic Chemistry
(Prerequisite: Grade XII Chemistry 30) | 3 | 3 |
| 4. Mathematics 211 (formerly 201)—Elementary Mathematics
(Prerequisites: Grade XII Mathematics 30 and Mathematics 31) | 5 | 0 |
| or
Mathematics 211 | 5 | 0 |
| and
Mathematics 111—Trigonometry (Fall term only)
(Prerequisites: Grade XII Mathematics 30, and special permission) | 2 | 0 |
| 5. Physics 240—Physical Properties of Matter, Heat and Sound (Corequisite: Mathematics 211 (formerly 201); Mathematics 111 and 211 (formerly 200) may be accepted by special permission) | 3 | 3 |
| 6. Physical Education 218 (M)—Recreational Activities | 0 | 2 |
| or
Physical Education 228 (W)—Recreational Activities | 0 | 2 |

HONORS DEGREES

Second, Third & Fourth Years

CHEMISTRY

Second Year:

Chemistry 370

Chemistry 312

Mathematics 315 (formerly 304)

Physics 340

An option from the special list of Division A or B courses for B.Sc. students (a foreign language other than German 210 must not be included as this option)

Third and Fourth Years:

The equivalent of ten full courses will be required.

These must include German 210, or (if the student has credit for this) any A or B course from the Special List for B.Sc. students.

Mathematics 415 (formerly 404).

Chemistry 500, 511, 531, 550, 551, 555, 575, 579, 581, 583, and 585.

Two open options are permitted.

In addition to the regular course examinations, candidates for honors may be given one or more oral or written examinations in the field of chemistry at the end of the fourth year.

Attendance in the Departmental Research Seminar, Chemistry 602, which meets once a week, is required in the fourth year.

- Notes:
1. All options shall be selected after consultation with the Department.
 2. Special programs will be set up, following the above as closely as possible, for students transferring from other programs.

CLASSICS

B.A. DEGREE

The Honors B.A. Degree in Classics is a four-year program. A separate application for admission must be made to the Committee on Honors, Faculty of Arts and Science.

A statement will be found below of the general scheme of courses required to begin honors in this department. Applicants should consult the Department.

It is not implied that this scheme must be rigidly followed; the department is prepared at any time to discuss with prospective or actual students reasonable equivalents designed to meet special needs or desires of the persons concerned. In the courses dealing with the literary history, the economic and political history, and the private life of the classical peoples, oral examinations may at any time replace written tests, and a comprehensive examination, written or oral as the department may determine, will be a necessary condition for attaining final honors. Students who may desire an honors course in Greek and French; Greek and German; Latin and French; Latin and German: Classics, Ancient History and Archeology; or Greek and Philosophy, may obtain information on application to the department.

- Admission* (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
- (2) Four of these six subjects are compulsory.
- (3) Permission to take an honors program is granted only to students with high matriculation standing.

English 30	C
Social Studies 30	C
Mathematics 30	C
Mathematics 31	
Chemistry 30	O
Physics 30	O
Biology 32	O
French 30 German 30 Latin 30	C O

<i>First-Year Honors Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. Classics 381 (formerly 352)—History of Ancient Greece	3	0
or Classics 382 (formerly 350)—Classics in English (Greek)	3	0
2. Greek 100—Beginners' Greek	5	0
3. Latin 200—Latin Authors and Prose Composition (Prerequisite: Grade XII Latin 30)	3	0

HONORS DEGREES

- 4. One first-year Division A or B or C course (see pages 40, 41, 42).
- 5. One first-year Division C course (see p. 42).
- 6. Physical Education 218 (M)—Recreational Activities 0 2
or
Physical Education 228 (W)—Recreational Activities 0 2

Second, Third & Fourth Years

Programs in classics require at least five courses beyond the 100 level in the classical language chosen as a major; three or four courses beyond the 100 level in the classical language chosen as a minor; Classics 381 and 385 (Greek and Roman History); and eight or nine options, one of which must be a Science course which should be taken in the first year, for a total of twenty courses.

Study of at least one year of French or German is strongly recommended.

Some of the optional subjects will be integrated with this program, while others should be general options.

Honors in Latin or Greek with an Approved Second Subject

A degree with Honors will be awarded in Latin or Greek with an approved second subject, such as English, French, German, Philosophy, etc.

Programs in these fields require at least five courses beyond the 100 level in Latin or Greek; at least four in the second subject; Classics 382 (Greek Life and Letters); Classics 361 (Latin Literature in Translation); either Classics 381 (Greek History), if the major language is Greek; or Classics 385 or 386 (Roman History), if the major language is Latin; and eight options, one of which must be a Science course which should be taken in the first year, for a total of twenty courses.

Programs will be arranged in consultation with the other departments concerned.

ENGLISH

B.A. DEGREE

The Honors B.A. Degree in English is a four-year program. A separate application for admission must be made to the Committee on Honors, Faculty of Arts and Science.

Complete Honors programs are not yet available in all departments in the Faculty of Arts and Science, U.A.C. Applicants for the Honors program in English should consult the Head of the Department.

- Admission* (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
 (2) Four of these six subjects are compulsory.
 (3) Permission to take an honors program is granted only to students with high matriculation standing.

English 30	Social Studies 30	Mathematics 30	Mathematics 31	Chemistry 30	Physics 30	Biology 32	French 30 German 30 Latin 30
C	C	C		O	O	O	C O

<i>First-Year Honors Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. English 240—Survey of English Literature	3	0
2. French 200—First-Year University French (Prerequisite: Grade XII French 30)	3	1
or		
German 200—First-Year University German (Prerequisite: Grade XII German 30)	3	1
or		
Latin 200—Latin Authors and Prose Composition (Prerequisite: Grade XII Latin 30)	3	0
3. Philosophy 241 (formerly 240)—Introduction to Western Philosophy	3	0
or		
Philosophy 261 (formerly 260)—Introduction to Logic, Semantics and Scientific Method	3	0
4. A first-year Division A, B or C Course (see pp. 40, 41, 42).		
5. A first-year Division A, B or C Course (see pp. 40, 41, 42). (One of No. 4 or No. 5 may be a second language, but a student who begins a second language at University (one elected as an approved option) must continue it for one more year, unless specially exempted.)		
6. Physical Education 218 (M)—Recreational Activities	0	2
or		
Physical Education 228 (W)—Recreational Activities	0	2

HONORS DEGREES

Second, Third & Fourth Years

ENGLISH

Five of the senior English courses must be chosen to represent each of the following periods of literature: Old and Middle English, Renaissance, Seventeenth and Eighteenth Centuries, Nineteenth Century, Modern Period. At the discretion of the department, a student may take up to eleven full senior English courses. All courses are to be chosen in consultation with the head of the department.

Second Year: Three senior English courses.

Continuation of the first language.

An approved option, provided that language requirements have been met.*

English 501.

Third Year: Three senior English courses.

Two approved options, provided that language requirements have been met.*

English 502.

English 504 will be begun in the spring of this year and continued throughout the fourth.

Fourth Year: Two senior English courses.

Two approved options, both of which may be senior English courses if language requirements have been met.*

English 504 is to be continued and will count as a fifth course.

English 503.

*Language Requirements: A student who begins at University his first language (one chosen to satisfy the language requirement of the first year) must continue it for two more years. If the language of the first year is a language of matriculation, it need be continued for one year only. A student who begins at University a second language (one elected as an approved option) must continue it for one more year, unless specially exempted.

ENTOMOLOGY

B.Sc. DEGREE

The Honors B.Sc. Degree in Entomology is a four-year program. A separate application for admission must be made to the Committee on Honors, Faculty of Arts and Science.

The complete Honors program in Entomology is *not* available at U.A.C. Transfer to the Edmonton campus is required *after* the first year.

- Admission* (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
- (2) Five of these six subjects are compulsory.
- (3) Permission to take an honors program is granted only to students with high matriculation standing.

English 30	C
Social Studies 30	C
Mathematics 30	C
Mathematics 31	
Chemistry 30	C
Physics 30	O
Biology 32	O
French 30 German 30 Latin 30	C

<i>First-Year Honors Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. Botany 271 (formerly 201)—Introductory Botany	3	3
2. Chemistry 230—Inorganic Chemistry (Prerequisite: Grade XII Chemistry 30)	3 (plus 1 hour seminar)	3
3. English 240—Survey of English Literature	3	0
4. Physics 100—General Elementary Physics or Physics 200—General Physics (Prerequisite: Grade XII Physics 30)	3 3	3 3
5. Zoology 220—Elementary Zoology	3	3
6. Physical Education 218 (M)—Recreational Activities or Physical Education 228 (W)—Recreational Activities	0 0	2 2

GENETICS

B.Sc. DEGREE

The Honors B.Sc. Degree in Genetics is a four-year program. A separate application for admission must be made to the Committee on Honors, Faculty of Arts and Science.

Complete Honors programs are not yet available in all departments in the Faculty of Arts and Science, U.A.C. Applicants for the Honors program in Genetics should consult the Head of the Department.

- Admission*
- (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
 - (2) Five of these six subjects are compulsory.
 - (3) Permission to take an honors program is granted only to students with high matriculation standing.

English 30	C
Social Studies 30	C
Mathematics 30	C
Mathematics 31	
Chemistry 30	C
Physics 30	O
Biology 32	O
French 30 German 30 Latin 30	C

<i>First-Year Honors Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. Botany 271 (formerly 201)—Introductory Botany	3	3
2. Chemistry 230—Inorganic Chemistry (Prerequisite: Grade XII Chemistry 30)	3 (plus 1 hour seminar)	3
3. English 240—Survey of English Literature	3	0
4. Mathematics 211 (formerly 201)—Elementary Mathematics (Prerequisites: Grade XII Mathematics 30 and Mathematics 31)	5	0
or Mathematics 211	5	0
and Mathematics 111—Trigonometry (Fall term only) (Prerequisites: Grade XII Mathematics 30, and special permission)	2	0
5. Zoology 220 — Elementary Zoology	3	3
6. Physical Education 218 (M)—Recreational Activities	0	2
or Physical Education 228 (W)—Recreational Activities	0	2

GEOGRAPHY

B.A. DEGREE

The Honors B.A. Degree in Geography is a four-year program. A separate application for admission must be made to the Committee on Honors, Faculty of Arts and Science.

Complete Honors programs are not yet available in all departments in the Faculty of Arts and Science, U.A.C. Applicants for the Honors program in Geography should consult the Head of the Department.

Admission (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.

(2) Four of these six subjects are compulsory.

(3) Permission to take an honors program is granted only to students with high matriculation standing.

English 30	C
Social Studies 30	C
Mathematics 30	C
Mathematics 31	
Chemistry 30	O
Physics 30	O
Biology 32	O
French 30	C
German 30	O
Latin 30	

<i>First-Year Honors Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. English 240—Survey of English Literature	3	0
2. Geography 201—Physical Geography	3	2
3. A first-year Division B Course (see page 41). (The department recommends Economics 200)		
4. A first-year Division A or B Course (see pp. 40, 41). (The department recommends Anthropology 202, History 200 or 210, Political Science 200, and Sociol- ogy 202, although no preference is implied by this order.)		
5. A first-year Division C Course (see page 42). (The department recommends Geology 201)		
6. Physical Education 218 (M)—Recreational Activities	0	2
or		
Physical Education 228 (W)—Recreational Activities	0	2

HONORS DEGREES

Second, Third & Fourth Years

GEOGRAPHY

- Second Year: Geography 300
 Geography 301
 Either Geography 302 or 303
 Two approved options.
- Third Year: Geography 400
 One of Geography 302, 303, 401, 410, 416, 418 or 420.
 Three approved senior options, one to be from Division
 C
- Fourth Year: Geography 502
 One of Geography 402, 404, 406, 408, 412, 414 or 422.
 Three approved senior options.

Geography 300	C
Geography 301	C
Geography 302	C
Geography 303	C
Geography 400	C
Geography 401	C
Geography 410	C
Geography 416	C
Geography 418	C
Geography 420	C
Geography 502	C
Geography 402	C
Geography 404	C
Geography 406	C
Geography 408	C
Geography 412	C
Geography 414	C
Geography 422	C

GEOGRAPHY

B.Sc. DEGREE

The Honors B.Sc. Degree in Geography is a four-year program. A separate application for admission must be made to the Committee on Honors, Faculty of Arts and Science.

Complete Honors programs are not yet available in all departments in the Faculty of Arts and Science, U.A.C. Applicants for the Honors program in Geography should consult the Head of the Department.

- Admission*
- (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
 - (2) Four of these six subjects are compulsory.
 - (3) Permission to take an honors program is granted only to students with high matriculation standing.

English 30	C
Social Studies 30	C
Mathematics 30	C
Mathematics 31	
Chemistry 30	O
Physics 30	O
Biology 32	O
French 30 German 30 Latin 30	C

First-Year Honors Program

Hours
Lecture Laboratory

- | | | |
|---|---|--|
| 1. Chemistry 230—Inorganic Chemistry
(Prerequisite: Grade XII
Chemistry 30)
or
Mathematics 211 (formerly 201)—Elementary Math-
ematics
(Prerequisites: Grade XII Mathe-
matics 31)
or
Mathematics 211
and
Mathematics 111—Trigonometry (Fall term only)
(Prerequisites: Grade XII Mathe-
matics 30, and special permission)
or
Statistics 255 (formerly 265)—Elementary Statistics
(Prerequisite: Grade XII Mathematics 30) | 3
(plus 1 hour seminar)

5

5

2

3

3

3

3 | 3

0

0

0

3

0

2

3 |
|---|---|--|

HONORS DEGREES

- 5. One first-year Division C course (see page 42).
- 6. Physical Education 218 (M)—Recreational Activities 0 2
or
Physical Education 228 (W)—Recreational Activities 0 2

Second, Third & Fourth Years

GEOGRAPHY

- Second Year: Geography 300
Geography 301
Geography 303
Two approved options from Division C (see page 42)
- Third Year: Geography 400
One of Geography 302, 401, 405, 410, 416 or 418.
One approved option from Divisions A or B (see pp. 40, 41).
Two approved options from Division C (see page 42)
- Fourth Year: Geography 502
An approved second senior Geography course.
One approved option in Geology.
One approved option from Division C.
One approved option.

Students are required to have a reading knowledge of French or German.

At the end of the fourth year a candidate for honors will be required to take an oral or written examination in the field of Geography.

GEOLOGY

B.Sc. DEGREE

The Honors B.Sc. Degree in Geology is a four-year program. A separate application for admission must be made to the Committee on Honors, Faculty of Arts and Science.

The complete Honors program in Geology is *not* available at U.A.C. Transfer to the Edmonton campus is required *after* the second year.

- Admission*
- (1) Seven subjects of Alberta Grade XII (Senior Matriculation) are required.
 - (2) Five of these seven subjects are compulsory.
 - (3) Permission to take an honors program is granted only to students with high matriculation standing.

English 30	C
Social Studies 30	C
Mathematics 30	C
Mathematics 31	C
Chemistry 30	O
Physics 30	O
Biology 32	O
French 30 German 30 Latin 30	C

<i>First-Year Honors Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. English 240—Survey of English Literature	3	0
2. Geology 201—General Geology	3	3
3. Mathematics 211 (formerly 201) — Elementary Mathematics (Prerequisites: Grade XII Mathematics 30 and Mathematics 31)	5	0
or Mathematics 211	5	0
and Mathematics 111—Trigonometry (Fall term only) (Prerequisites: Grade XII Mathematics 30, and special permission)	2	0
4. Physics 240—Physical Properties of Matter, Heat and Sound (Corequisite: Mathematics 211 (formerly 201))	3	3
5. One first-year Division A, B or C Course (see pages 40, 41, 42.		
6. Physical Education 218 (M)—Recreational Activities or Physical Education 228 (W)—Recreational Activities	0	2
	0	2

HONORS DEGREES

Second, Third and Fourth Years

GEOLOGY

- Second Year: Geology 351
 Geology 353
 Botany 271 (formerly 201) or Zoology 220
 Physics 340
 One option from Division A or B.
- Third Year: Geology 454
 Geology 457
 Geology 461 and 464
 Geology 467 (Field School)
 Chemistry 370, one option.*
- Fourth Year: Geology 455 and three of four options to be selected
 in consultation with the Department.*

Students are advised to have a reading knowledge of a modern language.

*One of these options must be from Division A or B and one should be a course in Geophysics.

Honors in Physics and Geology

Students wishing to take Honors in Physics and Geology should consult the departments concerned.

GEOLOGY-ZOOLOGY

B.Sc. DEGREE

The Honors B.Sc. Degree in Geology and Zoology is a four-year program. A separate application for admission must be made to the Committee on Honors, Faculty of Arts and Science.

Complete Honors programs are not yet available in all departments in the Faculty of Arts and Science, U.A.C. Applicants for the Honors program in Geology and Zoology should consult the Head of the Department.

The Honors Geology and Zoology course is intended to prepare students, especially those with an interest in paleontology, for a career in either Geology or Zoology. By arrangement with his advisor, a student may select from a range of courses in Geology and Zoology, depending on his interests and abilities.

- Admission*
- (1) Seven subjects of Alberta Grade XII (Senior Matriculation) are required.
 - (2) Five of these seven subjects are compulsory.
 - (3) Permission to take an honors program is granted only to students with high matriculation standing.

English 30	C
Social Studies 30	C
Mathematics 30	C
Mathematics 31	C
Chemistry 30	O
Physics 30	O
Biology 32	O
French 30 German 30 Latin 30	C

<i>First-Year Honors Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. Geology 201—General Geology	3	3
2. English 240—Survey of English Literature	3	0
3. Mathematics 211 (formerly 201)—Elementary Mathematics (Prerequisites: Grade XII Mathematics 30 and Mathematics 31)	5	0
or Mathematics 211	5	0
and Mathematics 111—Trigonometry (Fall term only) matics 30, and special permission) (Prerequisites: Grade XII Mathe-	2	0
4. Zoology 220 — Elementary Zoology	3	3
5. One first-year Division A or B Course (see pp. 40, 41).		
6. Physical Education 218 (M)—Recreational Activities or Physical Education 228 (W)—Recreational Activities	0	2
	0	2

HONORS DEGREES

HISTORY

B.A. DEGREE

The Honors B.A. Degree in History is a four-year program. A separate application for admission must be made to the Committee on Honors, Faculty of Arts and Science.

The complete Honors program in History is available at U.A.C. Students proposing to read for Honors in History should consult the Head of the Department at the time of their first registration. Registration in the first year of Honors is similar to that in the History pattern, but should include a foreign language. Students who wish to enter Honors at the beginning of the second year should consult the Head of the Department.

The degree of Bachelor of Arts with Honors in History is awarded on the following basis:

- (1) Comprehensive examinations written at the end of the fourth year in three fields of historical study:

One of British Medieval	(History 511)
British modern	(History 512)
One of Canadian	(History 513)
American	(History 514)
One of Medieval European	(History 515)
European, 1500-1789	(History 516)
European, 1789-1939	(History 517)

Candidates may not present both the British and European medieval fields.

- (2) Examinations, oral and written, at the end of the fourth year, in a special historical subject chosen by the student not later than the beginning of his third year (History 500 and 501). The candidate in addition will be required to write a minor thesis utilizing primary source material.
- (3) Satisfactory completion of approved courses in two other fields of study chosen in consultation with the Head of the Department, e.g. English, Philosophy, Political Science, a second language. At least two courses must be taken during a student's undergraduate program in each of the two fields chosen.
- (4) Proof of ability to read a modern language other than English.

Normally Honors students in History take five courses a year. In their third year they will take History courses numbered in the 400's. They are expected to pursue a course of reading during the summers. This is arranged with the Department in connection with preparation for the comprehensive papers and the special subject. In their fourth year they normally will be enrolled in the appropriate History courses (Comprehensive) for the fields that they have chosen in consultation with the Head of the History Department.

HONORS DEGREES

- Admission*
- (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
 - (2) Four of these six subjects are compulsory.
 - (3) Permission to take an honors program is granted only to students with high matriculation standing.

English 30	
Social Studies 30	C
Mathematics 30	C
Mathematics 31	
Chemistry 30	O
Physics 30	O
Biology 32	O
French 30	C
German 30	O
Latin 30	

<i>First-Year Honors Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. English 240—Survey of English Literature	3	0
2. History 200—European History	3	0
or		
History 210—Canada and the United States, 1492-1939	3	0
3. A first-year Division B Course (see page 41).		
4. A first-year Division A or B course (see pp. 40, 41). (This should be a foreign language, i.e. French, German, or Latin)		
5. A first-year Division C Course (see page 42).		
6. Physical Education 218 (M)—Recreational Activities	0	2
or		
Physical Education 228 (W)—Recreational Activities	0	2

HONORS DEGREES

MATHEMATICS

B. Sc. DEGREE

The Honors B.Sc. Degree in Mathematics is a four-year program. A separate application for admission must be made to the Committee on Honors, Faculty of Arts and Science.

The complete Honors program in Mathematics is *not* available at U.A.C. Transfer to the Edmonton campus is required *after* the third year.

- Admission*
- (1) Seven subjects of Alberta Grade XII (Senior Matriculation) are required.
 - (2) Five of these seven subjects are compulsory.
 - (3) Permission to take an honors program is granted only to students with high matriculation standing.

C	English 30
C	Social Studies 30
C	Mathematics 30
C	Mathematics 31
O	Chemistry 30
O	Physics 30
O	Biology 32
C	French 30 German 30 Latin 30
O	

<i>First-Year Honors Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. Mathematics 217 — Calculus	5	0
2. Mathematics 283 — Algebra and Geometry	3	0
3. Physics 243 — Elements of Physics	3	3
4. Statistics 267—Numerical Mathematics, Statistics and Probability	3	2
5. One first-year Division A or B course (see pp. 40, 41).		
6. Physical Education 218 (M)—Recreational Activities	0	2
or		
Physical Education 228 (W)—Recreational Activities	0	2

Second, Third and Fourth Years

Second Year: Mathematics 317 (formerly 306)
Mathematics 321 (formerly 310)
Statistics 267 (formerly 255) or Mathematics 281
(formerly 270)
One option from Division C
One option from Division A or B.*

Third Year: Mathematics 431 (formerly 421), 433 (formerly 422)
and 435 (formerly 425)
One approved Mathematics option
One approved option
and one option from Division A or B.

Fourth Year: Mathematics 500
Two approved Mathematics options
(preferably Mathematics 510 and 540)
Two approved options
(at least one from another department).

Students who hope to do graduate work in mathematics should select two of the open options in third and fourth year from Mathematics or Mathematical Physics.

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HONORS DEGREES

APPLIED MATHEMATICS

B. Sc. DEGREE

The Honors B.Sc. Degree in Applied Mathematics is a four-year program. A separate application for admission must be made to the Committee on Honors, Faculty of Arts and Science. The complete Honors programs are not yet available in all departments in the Faculty of Arts and Science, U.A.C. Applicants for the Honors program in Applied Mathematics should consult the Head of the Department.

- Admission* (1) Seven subjects of Alberta Grade XII (Senior Matriculation) are required.
- (2) Five of these seven subjects are compulsory.
- (3) Permission to take an honors program is granted only to students with high matriculation standing.

English 30	C
Social Studies 30	C
Mathematics 30	C
Mathematics 31	C
Chemistry 30	O
Physics 30	O
Biology 32	O
French 30 German 30 Latin 30	C

<i>First-Year Honors Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. Mathematics 217 — Calculus	5	0
2. Mathematics 283 — Algebra and Geometry	3	0
3. Physics 243 — Elements of Physics	3	3
4. Statistics 267—Numerical Mathematics, Statistics and Probability	3	2
5. One first-year Division A or B Course (see pp. 40, 41).		
6. Physical Education 218 (M)—Recreational Activities	0	2
or		
Physical Education 228 (W)—Recreational Activities	0	2

HONORS DEGREES

Second, Third & Fourth Years

APPLIED MATHEMATICS

The B.Sc. degree with Honors in Applied Mathematics may be taken by students who wish to specialize in mechanics, including hydrodynamics, aerodynamics, elasticity, and the theory of relativity.

- Second Year: Mathematics 317 (formerly 306)
 Mathematics 321 (formerly 310)
 Statistics 267 (formerly 255)
 or Mathematics 281 (formerly 270)
 One option from Division C,
 preferably a Physics course.
- Third Year: Mathematics 431 (formerly 421), 433 (formerly 422)
 435 (formerly 425), 441 (formerly 430)
 An approved Physics option
 An option from Physics or Mathematics, or
 Geography 405.
- Fourth Year: Mathematics 500
 Physics 550
 An option from Division A or B
 Two approved options from Mathematics or Physics
 (preferably from Mathematics 540, 555, 580, or
 Physics 510, 570).

The program must be approved by the Department of Mathematics.

The A or B options may include German 210.

HONORS DEGREES

MICROBIOLOGY

B.Sc. DEGREE

The Honors B.Sc. Degree in Microbiology is a four-year program. A separate application for admission must be made to the Committee on Honors, Faculty of Arts and Science.

The complete Honors programs are not yet available in all departments in the Faculty of Arts and Science, U.A.C. Applicants for the Honors program in Microbiology should consult the Head of the Department.

- Admission* (1) Seven subjects of Alberta Grade XII (Senior Matriculation) are required.
- (2) These seven subjects are compulsory.
- (3) Permission to take an honors program is granted only to students with high matriculation standing.

English 30	C
Social Studies 30	C
Mathematics 30	C
Mathematics 31	C
Chemistry 30	C
Physics 30	C
Biology 32	
French 30 German 30 Latin 30	C

<i>First-Year Honors Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. Botany 271 (formerly 201)—Introductory Botany or Zoology 220—Elementary Zoology	3	3
2. Chemistry 230—Inorganic Chemistry (Prerequisite: Grade XII Chemistry 30)	3 (plus 1 hour seminar)	3
3. English 240—Survey of English Literature	3	0
4. Mathematics 211 (formerly 201)—Elementary Mathematics (Prerequisites: Grade XII Mathematics 30 and Mathematics 31)	5	0
or Mathematics 211	5	0
and Mathematics 111—Trigonometry (Fall term only) (Prerequisites: Grade XII Mathematics 30, and special permission)	2	0
5. Physics 200 — General Physics (Prerequisite: Grade XII Physics 30)	3	3
6. Physical Education 218 (M)—Recreational Activities or Physical Education 228 (W)—Recreational Activities	0	2
	0	2

MODERN LANGUAGES

B.A. DEGREE

The Honors B.A. Degree in Modern Languages is a four-year program. A separate application for admission must be made to the Committee on Honors, Faculty of Arts and Science.

The complete Honors program in Modern Languages is available at U.A.C.

Degrees with Honors from this Department will fall into two main groups:—

- (1) Honors in Modern Languages and Literature.
- (2) Honors in one Modern Language and an approved minor subject, such as Latin or English.

Programs in group (1) will require a maximum of eight courses in the language chosen as the major, four or five courses in the language chosen as the minor, and seven or eight options (one of which must be a Division C course in the first year), for a total of twenty courses. Some of the optional subjects will be integrated with the language program, while others should be general options.

These programs are recommended to students wishing to specialize in a foreign language in order to embrace an academic career, particularly to those intending to go on to post-graduate work. A reduction may be made in the number of courses in the major language by students preparing for other careers and in special cases. As a general rule, students entering with a normal matriculation will not be permitted a third modern language until they have laid a firm foundation in the first two.

Programs in group (2) will require eight courses in the major, four to six in the minor subject, and six to eight approved options, (one of which must be a division C course in the first year), for a total of twenty courses. Programs in this group will be arranged in consultation with both Departments concerned.

In addition to the courses listed here, all Honors students will take, in each year, such laboratory hours as may be deemed necessary to improve their oral proficiency.

Apart from the regular course examinations at the end of the fourth year, students may be required to take comprehensive oral examinations in the languages studied.

HONORS DEGREES

- Admission* (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
- (2) Four of these six subjects are compulsory.
- (3) Permission to take an honors program is granted only to students with high matriculation standing.

English 30	Social Studies 30	Mathematics 30	Mathematics 31	Chemistry 30	Physics 30	Biology 32	French 30 German 30 Latin 30
C	C	C		O	O	O	C O O

<i>First-Year Honors Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. English 240—Survey of English Literature	3	0
2. French 200—First Year University French (Prerequisite: Grade XII French 30)	3	1
or		
German 200—First Year University German (Prerequisite: Grade XII German 30)	3	1
or		
Latin 200—Latin Authors and Prose Composition (Prerequisite: Grade XII Latin 30)	3	0
3. A second foreign language. That is, one other from: French 200—First Year University French (Prerequisite: Grade XII French 30)	3	1
or		
German 200—First Year University German (Prerequisite: Grade XII German 30)	3	1
or		
Latin 200—Latin Authors and Prose Composition (Prerequisite: Grade XII Latin 30)	3	0
or		
Greek 100 — Beginners' Greek	5	0
4. A first-year Division B Course (see page 41).		
5. A first-year Division C Course (see page 42).		
6. Physical Education 218 (M)—Recreational Activities	0	2
or		
Physical Education 228 (W)—Recreational Activities	0	2

Second, Third & Fourth Years

FRENCH

The Honors program in French is designed to provide two years of general culture and two years of concentration in the major field selected. A student may therefore enter Honors at the end of the first or second year of the general B.A., provided he has the required standing and provided he has made a suitable course selection. The Honors program consists of seven or eight courses in French, three or four in Spanish, and eight to ten approved options (one of which must be a Science course in the first year), for a total of twenty courses. In addition, Honors students will take, each year, such laboratory hours as may be deemed necessary to improve their oral proficiency.

Combined Honors Program:

A degree with Honors in French and an approved second subject such as Latin, English, German, will be awarded to students successfully completing a program of studies similar to the one outlined above, except that the number of senior courses will be as nearly as possible equal in each of the two languages. All such programs must be approved by both the departments concerned.

Second, Third & Fourth Years

GERMAN

A degree with Honors will be awarded in German with an approved second subject such as English, French, History, Latin, Linguistics, etc.

The program will require a maximum of eight courses in German, which must include German 510 in the fourth year, four to six in the second subject, and six to eight approved options, for a total of twenty courses. In addition, all Honors students will take in each year such laboratory hours as may be deemed necessary to improve their oral proficiency.

English 240 and a Science course must be included in the first year. History 322 and Linguistics 400 are to be included in the second and/or third years.

All programs will be arranged in consultation with the other departments concerned and departmental approval of the program is required before registration.

Combined Honors Programs

A degree with Honors in German and English, German and French, German and Latin, may be awarded to students following a program of studies similar to the one outlined above, except that the number of senior courses in each subject will be as nearly as possible equal and selected in accordance with departmental requirements.

PHILOSOPHY

HONORS B.A. DEGREE

The Honors B.A. Degree in Philosophy is a four-year program. A separate application for admission must be made to the Committee on Honors, Faculty of Arts and Science.

The complete Honors programs are not yet available in all departments in the Faculty of Arts and Science, U.A.C. Applicants for the Honors program in Philosophy should consult the Head of the Department.

Degrees with Honors from this Department will fall into these groups:

- (1) B.A. with Honors in Philosophy and an approved minor subject;
- (2) B.A. with Honors in Philosophy and Greek.

Students are advised to consult the Department for information before choosing one of the groups, and in any case, Departmental approval of the final program of studies is required before registration. In the case of the students under (2), the program will be arranged in consultation with the Department of Classics and the Department of Philosophy.

- Admission*
- (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
 - (2) Four of these six subjects are compulsory.
 - (3) Permission to take an honors program is granted only to students with high matriculation standing.

English 30	Social Studies 30	Mathematics 30	Mathematics 31	Chemistry 30	Physics 30	Biology 32	French 30	German 30	Latin 30
C	C	C		O	O	O	C	O	O

<i>First-Year Honors Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. English 240—Survey of English Literature	3	0
2. Philosophy 241 (formerly 240)—Introduction to Western Philosophy	3	0
or		
Philosophy 261 (formerly 260)—Introduction to Logic, Semantics and Scientific Method	3	0
3. A first-year Division B Course (see page 41).		
4. A first-year Division A or B Course (see pp. 40, 41).		
5. A first-year Division C course (see p. 42).		
6. Physical Education 218 (M)—Recreational Activities	0	2
or		
Physical Education 228 (W)—Recreational Activities	0	2

HONORS DEGREES

Second, Third & Fourth Years

PHILOSOPHY

Honors in Philosophy will require nine courses in Philosophy. Four in a minor subject, or an integrated selection of five or six courses in a group of subjects, will also be required. This part of the program will be closely related to the student's special interests within the field of philosophy. Optional courses outside the fields of philosophy and the minor will complete the program.

Honors in Philosophy and Greek will follow the requirements of Honors in Philosophy, with some reduction in the number of Philosophy courses in order to increase the number of Greek courses beyond the requirements for a minor subject.

In addition to final examinations in courses prescribed, students in the final year of both groups will be required to write two comprehensive examinations, one of which may take the form of an essay paper.

HONORS DEGREES

PHYSICS

B.Sc. DEGREE

The Honors B.Sc. Degree in Physics is a four-year program. A separate application for admission must be made to the Committee on Honors, Faculty of Arts and Science.

The complete Honors program in Physics is *not* available at U.A.C. Transfer to the Edmonton campus is required after the third year.

- Admission* (1) Seven subjects of Alberta Grade XII (Senior Matriculation) are required.
- (2) Six of these seven subjects are compulsory.
- (3) Permission to take an honors program is granted only to students with high matriculation standing.

English 30	C
Social Studies 30	C
Mathematics 30	C
Mathematics 31	C
Chemistry 30	C
Physics 30	O
Biology 32	O
French 30 German 30 Latin 30	C

<i>First-Year Honors Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. Chemistry 230—Inorganic Chemistry (Prerequisite: Grade XII Chemistry 30)	3 (plus 1 hour seminar)	3
2. English 240—Survey of English Literature	3	0
3. Mathematics 217 — Calculus (Prerequisite: Grade XII Mathematics 31)	5	0
4. Mathematics 283—Algebra and Geometry (Prerequisite: Grade XII Mathematics 30)	3	0
5. Physics 243—Elements of Physics	3 (plus 1 hour seminar)	3
6. Physical Education 218 (M)—Recreational Activities or Physical Education 228 (W)—Recreational Activities	0	2
	0	2

HONORS DEGREES

Second, Third & Fourth Years

PHYSICS

- Second Year: Mathematics 267 and 317 (formerly 306)
 Physics 303, 305, 351 and 361
 An approved foreign language course.
- Third Year: Mathematics 431 (formerly 421), 433 (formerly 422)
 and 441 (formerly 430)
 Physics 403 or 405, 409 and 451
 An approved Arts option
 (with the consent of the Department, this
 option may be deferred until the fourth year).
- Fourth Year: Not given in Calgary in 1963-64.

Honors in Physics and Geology

Students wishing to take Honors in Physics and Geology should consult the departments concerned.

B.Sc. in Engineering Physics

Students interested in the B.Sc. degree in Engineering Physics should consult the Dean of the Faculty of Engineering.

PHYSICS-GEOLOGY

B.Sc. DEGREE

The Honors B.Sc. Degree in Physics and Geology is a four-year program. A separate application for admission must be made to the Committee on Honors, Faculty of Arts and Science.

The complete Honors program in Physics and Geology is *not* available at U.A.C. Transfer to the Edmonton campus is required *after* the third year.

This program is designed to prepare students for graduate work in either Physics or Geology, or for careers in Geophysics. By arrangement with the departments concerned, a student may select from a wide range of courses in Physics and Geology, depending on his interests. The following typical program contains roughly equivalent amounts of Physics and Geology. Particular programs may include relatively greater amounts of Physics or Geology.

- Admission*
- (1) Seven subjects of Alberta Grade XII (Senior Matriculation) are required.
 - (2) Six of these seven subjects are compulsory.
 - (3) Permission to take an honors program is granted only to students with high matriculation standing.

English 30	C
Social Studies 30	C
Mathematics 30	C
Mathematics 31	C
Chemistry 30	C
Physics 30	O
Biology 32	O
French 30 German 30 Latin 30	C

<i>First-Year Honors Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. Chemistry 230—Inorganic Chemistry (Prerequisite: Grade XII Chemistry 30)	3 (plus 1 hour seminar)	3
2. English 240—Survey of English Literature	3	0
3. Geology 201 — General Geology	3	3
4. Mathematics 217 — Calculus (Prerequisite: Grade XII Mathematics 30)	5	0
5. Physics 243—Elements of Physics (Corequisite: Mathematics 217) (plus 1 hour seminar)	3	3
6. Physical Education 218 (M)—Recreational Activities or Physical Education 228 (W)—Recreational Activities	0	2
	0	2

HONORS DEGREES

PHYSIOLOGY

B.A. DEGREE

The Honors B.A. Degree in Physiology is a four-year program. A separate application for admission must be made to the Committee on Honors, Faculty of Arts and Science.

The complete Honors programs are not yet available in all departments in the Faculty of Arts and Science, U.A.C. Applicants for the Honors program in Physiology should consult the Head of the Department.

- Admission*
- (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required
 - (2) Five of these six subjects are compulsory.
 - (3) Permission to take an honors program is granted only to students with high matriculation standing.

English 30	C
Social Studies 30	C
Mathematics 30	C
Mathematics 31	
Chemistry 30	C
Physics 30	O
Biology 32	O
French 30 German 30 Latin 30	C

First-Year Honors Program

	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. Chemistry 230—Inorganic Chemistry (Prerequisite: Grade XII Chemistry 30)	3 (plus 1 hour seminar)	3
2. English 240—Survey of English Literature	3	0
3. Mathematics 211 (formerly 201)—Elementary Mathematics (Prerequisites: Grade XII Mathematics 30 and Mathematics 31)	5	0
or		
Mathematics 211	5	0
and		
Mathematics 111—Trigonometry (Fall term only) (Prerequisites: Grade XII Mathematics 30, and special permission)	2	0

HONORS DEGREES

4. Physics 100 — General Elementary Physics	3	3
or		
Physics 200 — General Physics (Prerequisite: Grade XII Physics 30)	3	3
or		
Physics 240—Physical Properties of Matter, Heat and Sound (Corequisite: Mathematics 211 (form- erly 201); Mathematics 111 and 211 (formerly 200) may be accepted by special permission	3	3
5. Zoology 220 — Elementary Zoology	3	3
6. Physical Education 218 (M)—Recreational Activities	0	2
or		
Physical Education 228 (W)—Recreational Activities	0	2

POLITICAL ECONOMY-
ECONOMICS

B.A. DEGREE

The Honors B.A. Degree in Economics is a four-year program. A separate application for admission must be made to the Committee on Honors, Faculty of Arts and Science.

Complete Honors programs are not yet available in all departments in the Faculty of Arts and Science, U.A.C. Applicants for the Honors program in Economics should consult the Head of the Department.

- Admission*
- (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required
 - (2) Four of these six subjects are compulsory.
 - (3) Permission to take an honors program is granted only to students with high matriculation standing.

English 30	Social Studies 30	Mathematics 30	Mathematics 31	Chemistry 30	Physics 30	Biology 32	French 30 German 30 Latin 30
C	C	C		O	O	O	C O

<i>First-Year Honors Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. Economics 200 — Principles of Economics	3	0
2. English 240—Survey of English Literature	3	0
3. A first-year Division C Course (see page 42). or Accounting 200		
4. A first-year Division A or B or C Course (see pages 40, 41, 42).		
5. A first-year Division A or B or C Course (see pages 40, 41, 42).		
6. Physical Education 218 (M)—Recreational Activities	0	2
or Physical Education 228 (W)—Recreational Activities	0	2

HONORS DEGREES

Second, Third and Fourth Years

ECONOMICS

Second Year: Two courses in Economics
Statistics 265 (formerly 255)
Two options to be chosen in consultation
with the department.

Third and Fourth Years:

Before entering the third year each student will arrange in consultation with the department, a program of study and lectures to prepare himself for final comprehensive examinations.

Unless they have been taken in the first and second years, the following courses are required:

two courses in foreign languages, preferably French
or German (either two courses in one language or
one in each of two languages).

Accounting 200

Mathematics 211 and 111 or 211 (formerly 200 or 201).

Depending upon Mathematics credits obtained in Grade
XII. If credit has been obtained in Mathematics 31
it will only be necessary to enroll in Mathematics
211.

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HONORS DEGREES

POLITICAL ECONOMY- POLITICAL SCIENCE

B.A. DEGREE

The Honors B.A. Degree in Political Science is a four-year program. A separate application for admission must be made to the Committee on Honors, Faculty of Arts and Science.

The complete Honors programs are not yet available in all departments in the Faculty of Arts and Science, U.A.C. Applicants for the Honors program in Political Science should consult the Head of the Department.

- Admission*
- (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
 - (2) Four of these six subjects are compulsory.
 - (3) Permission to take an honors program is granted only to students with high matriculation standing.

English 30	C
Social Studies 30	C
Mathematics 30	C
Mathematics 31	
Chemistry 30	O
Physics 30	O
Biology 32	O
French 30	C
German 30	
Latin 30	O

<i>First-Year Honors Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. Political Science 200—Principles of Political Science	3	0
2. A first-year Division A Course (see page 40).		
3. A first-year Division C Course (see page 42).		
4. A first-year Division A or B or C Course (see pages 40, 41, 42).		
5. A first-year Division A or B or C Course (see pages 40, 41, 42).		
6. Physical Education 218 (M)—Recreational Activities	0	2
or		
Physical Education 228 (W)—Recreational Activities	0	2

HONORS DEGREES

Second, Third and Fourth Years

POLITICAL SCIENCE

Second Year: Two courses in Political Science.
Three options to be chosen in consultation with the department.

Third and Fourth Years:

Before entering the third year, each student will arrange, in consultation with the department, a program of study and lectures to prepare himself for final comprehensive examinations.

Unless they have been taken in the first and second years, the following courses are required:

two courses in foreign languages, preferably French or German (either two courses in one language or one in each of two languages).

English 101	30
English 102	30
English 103	30
English 104	30
English 105	30
English 106	30
English 107	30
English 108	30
English 109	30
English 110	30
English 111	30
English 112	30
English 113	30
English 114	30
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English 296	30
English 297	30
English 298	30
English 299	30
English 300	30

HONORS DEGREES

PSYCHOLOGY

B.A. DEGREE

The Honors B.A. Degree in Psychology is a four-year program. A separate application for admission must be made to the Committee on Honors, Faculty of Arts and Science.

Applicants for the Honors program in Psychology should consult the Head of the Department.

- Admission*
- (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
 - (2) Four of these six subjects are compulsory.
 - (3) Permission to take an honors program is granted only to students with high matriculation standing.

English 30	Social Studies 30	Mathematics 30	Mathematics 31	Chemistry 30	Physics 30	Biology 32	French 30 German 30 Latin 30
C	C	C		O	O	O	C O

<i>First-Year Honors Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. English 240—Survey of English Literature	3	0
2. Psychology 202—Introduction to General Psychology	3	0
*3. One first-year Division B Course (see page 41).		
or		
French 200—First-Year University French (Prerequisite: Grade XII French 30)	3	1
or		
German 200—First-Year University German (Prerequisite: Grade XII German 30)	3	1
or		
Latin 200—Latin Authors and Prose Composition (Prerequisite: Grade XII Latin 30)	3	0
*4. One first-year Division A, B or C Course (see pages 40, 41, 42).		
*5. One first-year Division C Course (see page 42).		
6. Physical Education 218 (M)—Recreational Activities	0	2
or		
Physical Education 228 (W)—Recreational Activities	0	2

*The department recommends that students choose Statistics 215 as one of their options. Other options recommended by the department are:

Anthropology 202; Chemistry 230 - prerequisite Grade XII Chemistry 30; Philosophy 241 or 261; Sociology 202; or Zoology 220.

HONORS DEGREES

Second, Third and Fourth Years

Students in second, third and fourth year Honors should consult the Head of the Department regarding their programs.

B.A. or B.Sc. DEGREE

PSYCHOLOGY

The Department offers both the B.A. and the B.Sc. degrees with honors in Psychology. Students wishing to emphasize the Humanities and Social Sciences in their program should register for the B.A.; those who wish to emphasize the Physical and Biological Sciences should register for the B.Sc.

Honors in Psychology will require six to ten courses in Psychology, including the following: Psychology 202, 382, 430, 460 and 500. A minimum of five courses will be taken in related subjects, one of which must be Statistics 215 (formerly 205). The courses in related subjects might be all in one field (e.g., Mathematics or Biology) or in several, depending on the student's special interest and relevance to the subject matter of Psychology. In addition, a minimum of five optional subjects will be chosen: some of these will be integrated with the program in Psychology, while others must be general options.

An important feature of the honors program includes the opportunity for the student to engage in independent study and research. During the fourth year the student in Psychology will write an honors thesis under the guidance of a member of the Department.

In addition to the regular course examinations candidates for Honors will conduct a Seminar based primarily on the Honors thesis.

Sociology and Psychology

Honors in Sociology and Psychology will require seven courses in Sociology and seven in Psychology. In addition, six other courses will be required to complete the program.

In addition to final examinations in courses prescribed, students in the final year of each group will be required to write two comprehensive examinations, one of which may take the form of an essay paper.

HONORS DEGREES

EXPERIMENTAL PSYCHOLOGY

B.Sc. DEGREE

The Honors B.Sc. Degree in Experimental Psychology is a four-year program. A separate application for admission must be made to the Committee on Honors, Faculty of Arts and Science.

Applicants for the Honors program in Experimental Psychology should consult the Head of the Department.

- Admission*
- (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
 - (2) Four of these six subjects are compulsory.
 - (3) Permission to take an honors program is granted only to students with high matriculation standing.

English 30	C
Social Studies 30	C
Mathematics 30	C
Mathematics 31	
Chemistry 30	O
Physics 30	O
Biology 32	O
French 30 German 30 Latin 30	C

<i>First-Year Honors Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. One of Chemistry 230—Inorganic Chemistry (Prerequisite: Grade XII Chemistry 30)	3 (plus 1 hour seminar)	3
or Chemistry 250—Organic Chemistry (Prerequisite: Grade XII Chemistry 30)	3	3
or Mathematics 211 (formerly 201)—Elementary Mathematics (Prerequisites: Grade XII Mathematics 30 and Mathematics 31)	5	0
or Mathematics 211	5	0
and Mathematics 111—Trigonometry (Fall term only) (Prerequisites: Grade XII Mathematics 30, and special permission)	2	0
or Physics 100—General Elementary Physics	3	3
or Physics 200 — General Physics (Prerequisite: Grade XII Physics 30)	3	3

HONORS DEGREES

2. English 240—Survey of English Literature	3	0
3. Psychology 202—Introduction to General Psychology	3	0
4. Statistics 215 (formerly 205)—Behavioral Statistics	3	3
5. Zoology 220—Elementary Zoology	3	3
6. Physical Education 218 (M)—Recreational Activities	0	2

or

Physical Education 228 (W)—Recreational Activities	0	2
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Second, Third and Fourth Years

Students in second, third, and fourth year Honors should consult the Head of the Department regarding their programs.

SOCIOLOGY

B.A. DEGREE

The Honors B.A. Degree in Sociology is a four-year program. A separate application for admission must be made to the Committee on Honors, Faculty of Arts and Science.

The complete Honors programs are not yet available in all departments in the Faculty of Arts and Science, U.A.C. Applicants for the Honors program in Sociology should consult the Head of the Department.

Degrees with Honors from this Department will fall into two groups:

- (1) B.A. with Honors in Sociology and an approved minor subject;
- (2) B.A. with Honors in Sociology and Psychology.

There are several possible programs within each of these groups, and more detailed information is available from the Department. Students are advised to consult the Department for information before choosing one of the groups, and in any case, Departmental approval of the final program of studies is required before registration. In the case of students under (2), the program will be arranged in consultation with the Department of Psychology.

- Admission*
- (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
 - (2) Four of these six subjects are compulsory.
 - (3) Permission to take an honors program is granted only to students with high matriculation standing.

C	English 30
C	Social Studies 30
C	Mathematics 30
	Mathematics 31
O	Chemistry 30
O	Physics 30
O	Biology 32
C	French 30
O	German 30
O	Latin 30

HONORS DEGREES

<i>First-Year Honors Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. English 240—Survey of English Literature	3	0
2. Sociology 202—Introductory Sociology	3	0
3. One first-year Division A, B or C Course (see pages 40, 41, 42). (The following Division B courses are recommended by the department: Anthropology 202, Economics 200, History 210, Philosophy 241 (formerly 240) or 261 (formerly 260), Political Science 200 or Psychology 202. The following Division C Courses are recommended by the department: Mathematics 111 and 211 (formerly 200) (prerequisite Grade XII Mathematics 30), Mathematics 211 (formerly 201) (prerequisite Grade XII Mathematics 30 and 31), or Statistics 215 (formerly 205).		
4. One first-year Division B Course (see page 41). (The following Division B Courses are recommended by the department: Anthropology 202, Economics 200, History 210, Philosophy 241 (formerly 240) or 261 (formerly 260), Political Science 200 or Psychology 202).		
5. One first-year Division C Course (see page 42). (The following Division C Courses are recommended by the department: Mathematics 111 and 211 (formerly 200)—prerequisite: Grade XII Mathematics 30; Mathematics 211 (formerly 201)—prerequisite Grade XII Mathematics 30 and 31; or Statistics 215 (formerly 205).		
6. Physical Education 218 (M)—Recreational Activities or Physical Education 228 (W)—Recreational Activities	0	2

SOCIOLOGY-
PSYCHOLOGY

B.A. DEGREE

The Honors B.A. Degree in Sociology and Psychology is a four-year program. A separate application for admission must be made to the Committee on Honors, Faculty of Arts and Science.

The complete Honors programs are not yet available in all departments in the Faculty of Arts and Science, U.A.C. Applicants for the Honors program in Sociology and Psychology should consult the Heads of the Departments.

There are several possible programs within this group, and more detailed information is available from the Departments. Students are advised to consult the Departments for information before choosing one of the groups, and in any case, Departmental approval of the final program of studies is required before registration.

- Admission*
- (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
 - (2) Four of these six subjects are compulsory.
 - (3) Permission to take an honors program is granted only to students with high matriculation standing.

English 30	Social Studies 30	Mathematics 30	Mathematics 31	Chemistry 30	Physics 30	Biology 32	French 30	German 30	Latin 30
C	C	C		O	O	O	C	O	

<i>First-Year Honors Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. English 240—Survey of English Literature	3	0
2. Psychology 202—Introduction to General Psychology	3	0
3. Sociology 202—Introductory Sociology	3	0
4. Statistics 215 (formerly 205)—Behavioral Statistics	3	3
5. A first-year Division A, B or C Course (see pages 40, 41, 42). (The following Division B Courses are recommended by the departments: Economics 200, Philosophy 241 (formerly 240) or 261 (formerly 260), or Political Science 200. The following Division C Course is recommended by the departments: Zoology 220.)		
6. Physical Education 218 (M)—Recreational Activities or Physical Education 228 (W)—Recreational Activities	0 0	2 2

HONORS DEGREES

Honors in Sociology will require eight to ten courses in Sociology. Depending on the special interests of the students, five or six courses in a related minor subject will be taken. An additional five or six courses outside the field of Sociology and the minor area will be required to complete the program.

Honors in Sociology and Psychology will require seven courses in Sociology and seven in Psychology. In addition, six other courses will be required to complete the program.

In addition to final examinations in courses prescribed, students in the final year of each group will be required to write two comprehensive examinations, one of which may take the form of an essay paper.

Students in the Honors program are required to take a foreign language or Statistics 265 (formerly 255) during the early part of the program.

ZOOLOGY

B.Sc. DEGREE

The Honors B.Sc. Degree in Zoology is a four-year program. A separate application for admission must be made to the Committee on Honors, Faculty of Arts and Science.

The complete Honors programs are not yet available in all departments in the Faculty of Arts and Science, U.A.C. Applicants for the Honors program in Zoology should consult the Head of the Department.

- Admission*
- (1) Six subjects of Alberta Grade XII (Senior Matriculation) are required.
 - (2) Five of these six subjects are compulsory.
 - (3) Permission to take an honors program is granted only to students with high matriculation standing.
 - (4) Students with Biology 32 (Grade XII) should consult the department before registering.

English 30	C
Social Studies 30	C
Mathematics 30	C
Mathematics 31	
Chemistry 30	C
Physics 30	O
Biology 32	O
French 30 German 30 Latin 30	C

<i>First-Year Honors Program</i>	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. Botany 271 (formerly 201)—Introductory Botany	3	3
2. Chemistry 230—Inorganic Chemistry (Prerequisite: Grade XII Chemistry 30)	3 (plus 1 hour seminar)	3
3. English 240—Survey of English Literature	3	0
4. Zoology 220—Elementary Zoology	3	3
5. One first-year language other than English		
6. Physical Education 218 (M)—Recreational Activities or Physical Education 228 (W)—Recreational Activities	0 0	2 2

HONORS DEGREES

Second, Third and Fourth Years

ZOOLOGY

The Honors program provides a comprehensive training in Zoology leading to higher degrees and a research or academic career. It requires a minimum of eight courses in Zoology, two of which are half-year, field-oriented courses. Certain ancillary subjects are required and other ancillary subjects may be taken as "approved options." Students are required to take the Zoology field course (Zoology 525) in the third and fourth years, to attend the Zoology Seminar (Zoology 520) in the fourth year and to undergo a comprehensive oral examination on basic biological facts and principles at the end of the fourth year. Honors students are often employed on biological work during the summers.

- Second Year:
- Zoology 300 and 350
Art option
Chemistry 350
Zoology 315 and Chemistry 455
- Third and
- Fourth Years:
- Five senior courses in Zoology, including
Zoology 411, 440, 481 and two of
Zoology 406, 408, 452, 462, 464, 465 and 471
Four approved options
One open option

Chemistry 350	Art option	Zoology 300	Zoology 315	Zoology 350	Zoology 411	Zoology 440	Zoology 481	Zoology 406	Zoology 408	Zoology 452	Zoology 462	Zoology 464	Zoology 465	Zoology 471
C	C	C	C	C	C	C	C	C	C	C	C	C	C	C

FACULTY OF EDUCATION

1. INTRODUCTION

The Faculty of Education is organized for the professional education of students for elementary, junior high, and senior high school grades and for graduate study and research in the field of education.

This part of the calendar appears the courses of study administered by the Faculty of Education together with regulations governing these programs. General regulations applicable to all members of the University are to be found in Part II of the calendar.

This part also contains regulations for certificates issued by the Alberta Department of Education on the recommendation of the Faculty of Education. Such certificates are issued under the authority of the University of Education.

PART V

Regulations for the Faculty of Education, University of Alberta, Calgary.

1. Board of Teacher Education and Certification

A Board of Teacher Education and Certification, representing jointly the Faculty of Education and the Department of Education, is established to advise the Department of Education on the recommendation of the Faculty of Education and to advise the Department of Education on the matters of instruction, the activities of supervisors in these programs, appointments to the staff of the Faculty of Education, and regulations governing the certification of teachers.

2. Programs (General Statement)

Differences in qualifications requirements are specified below.

The programs are detailed in Section VI. There are two general programs, one for elementary school teaching and one for secondary school teaching. Each provides for a measure of specialization.

In addition there is a highly specialized program in Industrial Arts.

All programs provide for certification by the Alberta Department of Education on the completion of two years of education. Higher certification is obtained at the end of the third year, and the Bachelor of Education degree at the end of the fourth year.

To suitable candidates the Faculty of Education in Edmonton offers graduate courses leading to the M.Ed., Ed.D., and Ph.D. degrees.

Selected graduate students are offered at Calgary (see Section VII, IX).

3. Programs in Edmonton and Calgary

All programs offered by the Faculty of Education, except for the B.Ed. in Industrial Arts, are available in Edmonton.

The following programs are available in Calgary:

- (a) All years of the B.Ed. program for elementary school teachers.
- (b) All years of the B.Ed. program for secondary school teachers.
- (c) All years of the B.Ed. in Industrial Arts program.

Except for students wishing to specialize in Drama, Music, Speech, and Business Education.

FACULTY OF EDUCATION

I. INTRODUCTION

The Faculty of Education is organized for the professional education of teachers for elementary, junior high, and senior high school grades, and for graduate study and research in the field of Education.

In this part of the calendar appear the courses of study administered by the Faculty of Education together with regulations governing these programs. General regulations applicable to all faculties of the University are to be found in Part II of the calendar.

This part also contains requirements for certificates issued by the Provincial Department of Education on the recommendation of the Faculty of Education. Such certificates are granted under the authority of the Minister of Education.

Address inquiries to: The Dean, Faculty of Education, University of Alberta, Calgary.

(1) *Board of Teacher Education and Certification*

A Board of Teacher Education and Certification, representing jointly the Department of Education, the University of Alberta, the Alberta Teachers' Association, and the Alberta School Trustees' Association, serves as a liaison body for the groups it represents. This board is purely an advisory body. It is authorized to make recommendations to the Minister of Education and to the President of the University respecting the programs of instruction, the estimates of expenditures on these programs, appointments to the staff of the Faculty of Education, and regulations governing the certification of teachers.

(2) *Programs (General Statement)*

Entrance or matriculation requirements are specified below.

The programs are detailed in Section VI. There are two general programs, one for elementary school teaching and one for secondary school teaching. Each provides for a measure of specialization.

In addition there is a highly specialized program in Industrial Arts.

All programs provide for certification by the Alberta Department of Education on the completion of two years of education, higher certificates at the end of the third year, and the Bachelor of Education degree at the end of the fourth year.

To suitable candidates the Faculty of Education in Edmonton offers graduate courses leading to the M.Ed., Ed.D., and Ph.D. degrees.

Selected graduate courses are offered at Calgary (see Section VII, F).

(3) *Programs at Edmonton and Calgary*

All programs offered by the Faculty of Education, except for the B.Ed. in Industrial Arts, are available in Edmonton.

The following programs are available in Calgary:

- (a) All years of the B.Ed. program for elementary school teachers.
- (b) All years of the B.Ed. program for secondary school teachers.*
- (c) All years of the B.Ed. in Industrial Arts program.

*Except for students wishing to specialize in Drama, Home Economics, and Business Education.

ADMISSION

II. ADMISSION

(1) *Matriculation Requirements*

Matriculants from the high schools of Alberta seeking admission to the Faculty of Education in September, 1963, must possess:

- (a) a High School Graduation Diploma with
- (b) "B" (50%) or higher standing in each of the courses of Grade XII as set forth below, and
- (c) an average in these courses of at least 60%:
 - 1. English 30.
 - 2. Social Studies 30.
 - 3, 4, 5, 6. Four of: French 30, German 30, Latin 30, Chemistry 30, Physics 30, Biology 30 or 32, Mathematics 30, Mathematics 31 (see Note 4, below), Music 30.

Notes:

- 1. Candidates intending to major in Biological Sciences or Household Economics should present Chemistry 30 or equivalent.
- 2. Candidates intending to major in Physical Sciences should present Chemistry 30, Physics 30, and Mathematics 30 or equivalents.
- 3. Candidates intending to major in Mathematics should present Mathematics 31 in addition to Mathematics 30.
- 4. Mathematics 31 to be accepted when presented after June, 1962, on the basis of a Grade XII Departmental Examination.
- 5. Adult applicants (age 20 or over) will not be required to present a High School Diploma, but (b) and (c) above still apply.

These general regulations notwithstanding, the University may, at its discretion, refuse admission to any applicant. For example, this regulation normally will be applied in cases where applicants have written an inordinate number of examinations in order to attain nominal entrance requirements at the University of Alberta.

(2) *Admission with Advanced Standing or Advanced Credits*

Applicants presenting transcripts from normal schools, teachers' colleges, or universities other than the University of Alberta, will have such transcripts evaluated by the Committee on Admissions. The transcripts should be submitted to the Dean of the Faculty of Education, University of Alberta, Calgary. A visé fee of five dollars is charged for evaluating documents issued in Canada and ten dollars for evaluating documents issued in other countries.

(3) *Extramural Credits*

(a) Credit to a maximum of four *junior* courses taken extramurally from another recognized university will be allowed, although the actual number will vary with the program.

(b) Students, who plan to register in courses at other universities for subsequent credit in the Faculty of Education, must first obtain the written permission of the Dean.

(4) *Application for Admission*

Application forms may be obtained from the office of the Registrar of the University, Calgary. Each student applying for the first time for admission to the Faculty of Education should write the Examinations Branch, Department of Education, Edmonton, requesting that two transcripts of his high school record be forwarded to the Registrar of the University at Calgary. When writing for transcripts he should give his name in full, the year in which his last departmental examinations were written and the grade level of these examinations. He should enclose the fee of \$2.00 charged for this service.

Students from outside the province will write to the Registrar of the Provincial Department of Education in the province where senior matriculation was obtained.

Credits obtained in the June examinations of 1963 should be submitted as soon as results are available.

No definite and final ruling concerning registration can be obtained until all certificates and transcripts of standing have been reviewed by the Committee on Admissions. The Faculty of Education gladly consults with and advises students regarding programs of study, but all decisions are unofficial and tentative until documents have been received and evaluated by the Committee on Admissions.

III. REGISTRATION

(1) *Registration and Pre-Registration Procedures*

Applicants for admission must:

- (a) furnish evidence by means of two transcripts of credit record from a Department of Education or other educational authority that they meet matriculation requirements;
- (b) complete, in triplicate, *Application for Admission* forms obtainable from the Registrar, and return to the Registrar before August 14, 1963.
- (c) indicate whether they expect to attend in Edmonton or Calgary.

(2) *Registration Details*

- (a) Change of Registration:

The accuracy of his registration forms is the responsibility of each student. Changes in registration may be allowed on application to the Faculty of Education office on or before October 9.

- (b) Transfer from One Program to Another:

In general, a student may transfer from one training program to another at any point in the four-year program, provided he obtains credit in subjects of the new program which were not included in the former one.

- (c) Registration in Physical Education:

General University regulations require all first-year students to obtain credit in physical education. Though students excused by a medical officer need not participate in physical exercise, they are held responsible for all theoretical and instructional phases of the courses.

GENERAL INFORMATION

(d) Limitation on Registration:

Except by special permission of the Council of the Faculty, no student under its jurisdiction may offer for credit in any period of twelve months from July 1st to June 30th more than the number of courses included in a year of the regular program. Except by special permission of the Council of the Faculty, no student may take in the Summer Session more than two courses.

IV. GENERAL INFORMATION

(1) *Education Undergraduate Society*

The Education Undergraduate Society (E.U.S.) is a professional organization and a branch of the Alberta Teachers' Association (A.T.A.). It is expected that all Education students will:

- (a) join the Society,
- (b) participate in its social activities, and
- (c) actively promote its professional interests.

(2) *Examinations*

Finals

Final examinations are held at the end of each winter, summer or special session. The pass mark in all subjects of both degree and certification programs is 50%.

Supplementals

- (a) There is no supplemental privilege in student teaching.
- (b) Teachers who, during the regular Supplemental Examination period, are in teaching positions may, with approval, write the supplemental examination at the end of the Summer Session. If an examination in the required subject is on the regular schedule, the fee for the supplemental is \$10.00. If a special examination paper must be prepared, the fee is \$15.00.
- (c) Students who *fail* courses in the Summer Session will not be granted supplementals.

(3) *Extramural Study*

For conditions under which undergraduates may receive credit for extramural study, see Section II (3).

The privilege of completing certain courses extramurally is sometimes extended to M.Ed. candidates and also to B.Ed. candidates who hold a B.A., B.Sc., or B.Comm. degree. No courses in Education are offered extramurally.

Some departments in the Faculty of Arts and Science may consent to extramural registration in certain courses.

(4) *Regulations Governing Certification*

For detailed regulations governing certification of teachers, students should write the Registrar, Department of Education, Administration Building, Edmonton, Alberta. A pamphlet is available on request.

(5) *Advance Credits for Certificated Teachers*

One year's credit in the four-year program is given for one year of basic teacher education.

A maximum of three course credits will be allowed in the four-year general B.Ed. program for courses completed in Alberta Department of Education summer school sessions, 1935-43 inclusive, one course credit being allowed for every 75 hours of certified attendance. For teachers discharged from the armed forces a date earlier than 1935 will be taken to make full allowance for the applicant's period of service.

Few advance credits can be given certificated teachers in the B.Ed. in Industrial Arts program. One or two credits may be allowed for Normal School or other basic training. Little credit can be given for courses completed in the 1935-43 summer sessions unless the courses are in the specialized field of the B.Ed. program for which they are being evaluated.

(6) *Special Second-Year Program for Certificated Teachers*

Certificated teachers will for their second year be entered upon a special program consisting almost exclusively of Arts and Science courses. For details, see Section VII, C.

(7) *Evening Credit Program*

Students contemplating registration in Evening Credit courses must contact Dr. T. G. Finn, Director, well in advance of August 31, the last day for registration in the Evening Credit Program.

V. CERTIFICATION

Alberta teaching certificates are issued only by the Department of Education, Government of Alberta. All inquiries concerning certification should be addressed to the Registrar, Department of Education, Edmonton.

The certificates mentioned in the following pages are authorized under Order-in-Council 728 (1954) of the Government of Alberta.

(1) *Types of Certificates*

Except as otherwise provided herein, the certificates issued hereafter by the Minister of Education shall be of the following classes:

Junior E Certificate,
Standard E Certificate,
Standard S Certificate,
Professional Certificate.

(2) *Limitation on Permanent Certificates*

No person other than a British subject or Canadian citizen is eligible to receive a permanent Alberta teacher's certificate.

(3) *Statement of Age and Citizenship*

"Statement of Age and Citizenship" forms must be completed by each applicant for an Alberta teacher's certificate.

(4) *Grade Ranges of Certificates*

The range of school grades throughout which each of the teachers' certificates mentioned above is a valid license to teach is shown in the following schedule:

<i>Certificates</i>	<i>Grades</i>
Junior E -----	I-IX
Standard E -----	I-IX
Standard S -----	IV-XI
Professional -----	I-XII

CERTIFICATION

(5) *The Junior E Certificate*

- (a) A person who had completed satisfactorily before September 1, 1962 an approved one year program prescribed for teachers of the elementary and junior high school grades may be granted an Interim Junior E Certificate.
- (b) Before the Interim Junior E Certificate may be made permanent, the holder:
 - (i) must provide evidence to the Department of Education through the Faculty of Education that he possesses matriculation standing that will admit him to a Bachelor of Education program.
 - (ii) must teach successfully in Alberta schools for two years, and
 - (iii) must be recommended by a Superintendent or Inspector of Schools.

(6) *The Standard E Certificate*

- (a) A person who has completed satisfactorily the first two years of the B.Ed. program of the University of Alberta prescribed for teachers of elementary and junior high school grades may be granted an Interim Standard E Certificate.
- (b) Before the Interim Standard E Certificate may be made permanent, the holder:
 - (i) must teach successfully in Alberta schools for two years, and
 - (ii) must be recommended by a Superintendent or Inspector of Schools.

(7) *The Standard S Certificate*

- (a) A person who has completed satisfactorily the first two years of the B.Ed. program of the University of Alberta prescribed for teachers of the high school grades may be granted an Interim Standard S Certificate.
- (b) The interim Standard S Certificate may be made permanent as in 4 (b) above.
- (c) Graduates from the Junior E program, or from a regular Normal School one-year program, will enter a six-course program for the second year of the elementary route, or a seven-course program for the second year of the secondary route. (See DETAILS OF PROGRAMS).

(8) *The Professional Certificate*

- (a) A person who has completed satisfactorily three years of the B.Ed. program of the University of Alberta prescribed for teachers of the elementary and junior high school grades or of the high school grades may be granted an Interim Professional Certificate.
- (b) The Interim Professional Certificate may be made permanent as in 6 (b) above.

(9) *The Certification of University Graduates*

- (a) The holder of a Bachelor's degree, an Honors Bachelor's degree or a Master's degree acceptable to the Minister may be granted an Interim Professional Certificate upon completion of one year's approved work in the Faculty of Education.
- (b) Such Interim Certificates may be made permanent as in 6 (b) above.

(10) *Teachers with Permanent Certification*

The requirement for a permanent certificate may be waived in the case of a teacher qualifying for any certificate, provided he previously held an Alberta permanent certificate of another class.

(11) *Exchange of Certificates*

The holder of a certificate or license issued under former regulations may, upon application to the Minister, exchange it for a new certificate as indicated in the following table:

TABLE OF CERTIFICATE RATINGS

<i>Certificates named in O.C. No. 70-50 or in former Regulations</i>	<i>Equivalent Certificates</i>
Temporary License	Interim Junior E
Junior Elementary and Intermediate School Certificate	Interim Junior E
Secnd-Class Certificate (see section 12 below)	Junior E
Elementary and Intermediate School Certificate	Junior E (with teaching privileges extended to include Gr. X)
Senior Elementary and Intermediate School Certificate	Standard E
Junior Certificate for the High School	Standard S
First-Class Certificate	Standard E and Standard S (with teaching privileges extended to include Gr. XII)
High School Certificate	Professional
Academic Certificate	Professional
First-Class Certificate with Bachelor's degree	Professional

(12) *Second-Class Certificate*

The holder of a permanent Second-Class Certificate may be granted a Junior E Certificate upon the completion of B.Ed. matriculation or one approved summer session of work taken either before or after the coming into effect of these regulation and if recommended by a Superintendent or Inspector of Schools. The holder of a Second-Class Certificate, either interim or permanent, shall be entitled to teach grades one to nine inclusive.

(13) *General*

The Minister may, with respect to existing certificates, take such further action as he may deem necessary, provided such action is not inconsistent with these regulations.

VI. BASIC GRADUATION REQUIREMENTS

- (1) To be granted the B.Ed. degree a student must obtain a passing mark or better in each course and obtain an average of 60% in all courses credited toward the degree. (Those who transfer to the B.Ed. program, University of Alberta, with advance standing will be required to maintain a 60% average on all courses completed at the University of Alberta toward the B.Ed. degree.)
- (2) A student will not be allowed to write more than *five* supplemental examinations for the purpose of obtaining passing marks or raising the average to the required 60%.
- (3) A student will not be allowed to write more than two supplemental examinations in any year.
- (4) A student who is repeating a year will be granted no supplemental privileges in the courses taken that year and must pass all courses with a 60% average to be allowed to continue.
- (5) The privilege of repeating a year will be granted to a student not more than once during his candidacy for a degree in the Faculty of Education.
- (6) The privilege of repeating a failed course will not be granted more than once.
- (7) The maximum number of additional courses, including repeated courses, in which a student may enrol for completion of a B.Ed. degree program may not exceed by more than *five* the number of courses required for completion of the particular B.Ed. degree program.

Note:

1. Students admitted prior to January 2nd, 1963, will be allowed to graduate, provided they do so before June 30th, 1966, by taking advantage of these graduation requirements or of those set forth in the 1962-63 Calendar of the Faculty of Education.
2. For graduation requirements for students enrolled in the B.Ed. program for holders of Approved Degrees, see the appropriate section, below.

VII. DETAILS OF PROGRAMS

In this section the course requirements of the following programs are described:

- A. B.Ed. Program — Elementary Route.
- B. B.Ed. Program—Secondary Route.
- C. Special Transfer Program for Certificated Teachers.
- D. B.Ed. Programs in Industrial Arts.
- E. B.Ed. Program for Holders of Approved Degrees.
- F. Advanced Study in Education.

(The B.Ed. Program in Vocational Education is offered only in Edmonton).

A. *Standard Elementary B.Ed. Route*

Upon completion of the first two years, candidates are eligible for the Interim Standard E Certificate, valid in Grades I to IX; completion of three years earns the Interim Professional Certificate, valid in Grades I to XII; completion of four years, the B.Ed. degree.

(1) *The Program*

First Year

- 1. Ed. FDN 201 and Ed. ADM 261
- 2. Ed. PSY 276
- 3. English 240
- 4. Major*
- 5. Approved Arts and Science option (See *General Notes*, 2 below).
- 6. Physical Education 218 or 228.

*For details, see *Major Fields*.

(See also *Section X, Special Information and Guidance for First-Year Students*)

Second Year

- 1. Ed. CI 205 and Ed. CI 231
- 2. Ed. CI 209 and Ed. CI 213
- 3. Ed. CI 221 and Ed. CI 237
- 4. P.E. 337 and Ed. CI 227
- 5. Ed. CI 200 (Student Teaching)
- 6. Major or Approved Arts and Science option.*

*Art or Music is recommended.

Third Year

- 1. Ed. PSY 476
- 2. Philosophy 241
- 3. Approved Social Science or History option
- 4. Major or Approved Arts and Science option
- 5. Major

Fourth Year

- 1. Ed. FDN 492
- 2. Arts and Science option
- 3. Senior Arts and Science or Education option
- 4. Senior Education option
- 5. Major

DETAILS OF PROGRAMS

(2) *Graduation requirements*

Students admitted prior to January 2, 1963, will be allowed to graduate, provided they do so before June 30, 1966, by taking advantage of alternatives (a) or (b) with respect to *Standing* and *Course Requirements* as stated below.

Students admitted after January 2, 1963, will be governed, with respect to graduation requirements by section (a) of *Standing* and *Course Requirements*.

1. *Standing*

(a) Basic requirements as outlined in Section VI, 1.

or

(b) Of the courses taken for the B.Ed. degree, students must obtain second class standing or better in no fewer than six, of which four must be senior courses.

2. *Course Requirements*

(a) *Two* approved Arts and Science options, each in a different field, chosen from the following five fields: Art, Mathematics, Music, Physical Education, and Science.

or

(b) *Two* course credits in English, one to be English 398; two course credits in science or one science and one mathematics; two course credits in the social sciences, one to be in Canadian History; and one course credit in each of art and music.

(3) *General Notes*

1. Elementary route students in the Second Year do not continue classes listed under 1, 2, 3, 4 during student teaching. Since student teaching is scheduled for forenoons, course 6 should be selected from an afternoon period.

2. For Course No. 5 in the First Year, students may select:

(a) An introductory course in an area other than the major
or

(b) A second course in the chosen major, if prerequisites permit.
(See *Major Fields*.)

(4) *Major Fields, Elementary Route*

Candidates must select a major field of study. Courses are to be chosen according to the patterns listed below:

I. *Art*

1. Art 230
2. Art 200 or 240
3. Art 300 or 330
4. Ed. CI 310

II. *English*

1. English 288
2. English 398
3. Approved Senior English or Linguistics (English 332, 380, 383, 384, 386, 391 or 397)
4. Ed. CI 322 or 338.

III. *Early Childhood Education*

1. An approved fine arts course
2. English 398
3. Physical Education 327 and Physical Education 329
4. Ed. CI 320 or 324

IV. *French*

1. French 200
2. French 330
3. Approved Senior French course
4. Ed. CI 336

V. *Mathematics*

1. Mathematics 211
2. Mathematics 281
3. Approved Senior Mathematics course
4. Ed. CI 328

*Students selecting a biological science in the first year must select a physical science in the second year, and vice versa.

VI. *Music*

1. Music 200
2. Music 300
3. Music 250 or 400
4. Ed. CI 314

IX. *Social Studies*

1. A basic course in any social science or history (Anthropology 202, Economics 200, History 200 or 210, Political Science 200 or Sociology 202)
2. Geography 201 or History 200 or Sociology 202 or an approved senior social science or history.*
3. Approved senior social science or history.*
4. Ed. CI 306

VII. *Physical Education*

1. Physical Ed. 200
2. Physical Ed. 327 and 329
3. Physical Ed. 423 and 425
4. Physical Ed. 427 and 429

VIII. *Science*

1. Botany 271 or Zoology 220 or
2. Chemistry 230 or Physics 200*
3. Geography 201 or Geology 201
4. Ed. CI 332

*A course sequent to one taken in a previous year.

(5) *Use of Options*

Students should give careful consideration to the various opportunities provided by the Arts and Science option, the Education option, and the Senior Arts or Science or Education option in the Elementary Route program. These may be regarded as "free" options and used to explore a variety of fields; or they may be patterned in such a way as to provide some preparation for certain functions relating to teaching in the elementary school.

The following are illustrative of the ways in which these courses may be patterned:

1. *Education of exceptional children in the elementary school*
Ed. PSY 354
One of Ed. PSY 450, 452, 454, 456, or 458
One of Psychology 352 or 382 or Sociology 370
2. *Further study in the major field*
Two Arts or Science courses in a major field
One supporting Education option
3. *Elementary School Libraries*
Ed. CI 346
English 398
One supporting Arts or Education option

Other patterns will be available in early childhood education, reading, second language instruction, etc.

STUDENTS ARE URGED TO PLAN THE PATTERNING OF THESE COURSES IN CONSULTATION WITH THE DEAN OR THE DEPARTMENT HEAD.

DETAILS OF PROGRAMS

B. Standard Secondary B.Ed. Route

Upon completion of the first two years, candidates are eligible for the Interim Standard S Certificate, valid in Grades IV to XI; completion of three years earns the Interim Professional Certificate, valid in Grades I to XII; completion of four years, the B.Ed. degree.

(1) *The Program*

First Year

1. Ed. FDN 201; and Ed. ADM 261
2. Ed. PSY 276
3. English 240
4. Major*
5. Approved Arts and Science option (see General Notes, below)
6. Physical Education 218 or 228.

*For details, see *Major Fields*.

(See also Section X, Special Information and Guidance for First-year Students.)

Second Year

1. Approved Social Science or History option
2. Curriculum and Instruction (Major Field).
3. Ed. CI 250 (Student Teaching)
4. Major
5. Major or Arts and Science option

Third Year

1. Ed PSY 476
2. Philosophy 241
3. Senior Education Option
4. Major
5. Major or Arts and Science option

Fourth Year

1. Ed. FDN 492
2. Senior Education option
3. Major
4. Major or Arts and Science option
5. Major or Arts and Science option

(2) *Graduation Requirements*

Students admitted prior to January 2, 1963, will be allowed to graduate, provided they do so before June 30, 1966, by taking advantage of alternatives (a) or (b) with respect to *Standing* and *Course Requirements* as stated below.

Students admitted after January 2, 1963, will be governed, with respect to graduation requirements, by section (a) of *Standing* and *Course Requirements*.

1. Standing

- (a) Basic graduation requirements as outlined in Section VI, 1.
or

- (b) Of the courses taken for the B.Ed. degree, students must obtain second class standing, or better, in no fewer than SIX, of which at least FOUR must be senior courses.

2. Course Requirements

- (a) Seven courses in the major field selected from the pattern for the major
or
(b) Either five courses in the major field and two in the minor, or four courses in the major field and three in the minor.

(3) *General Notes*

1. At least *three* courses in the major field must be completed by the end of the second year.
2. Secondary route students in the *Second Year* will register in courses 1, 4 and 5 in classes scheduled in the *afternoons only*. Forenoons must be kept clear for periods of Student Teaching.
3. For Course 5 in the First Year, students may select:
 - (a) An introductory course in an area other than the major
or
 - (b) A second course in the chosen major, if prerequisites permit (see Major Fields).

(4) *Major Fields, Secondary Route*

Each candidate must select a major field of study. Courses are to be chosen according to the patterns listed below.

<i>Major Field</i>	<i>Prescribed Core</i>	<i>Supporting Courses</i>
I. English	1. English 288 2. English 386 3. Three of English 332, 380, 383, 384, 5. 391 or 397	6.) Any two senior 7.) English courses or Two approved courses in history, foreign language, the fine arts or classics.
II. French	1. French 200 2. French 330 3. French 350 4. One of French 360, 370, 375, 380 or 399 5. French 400	6.) Any one of the courses 7.) listed under 4 and a senior Arts option or Two approved courses in history, English or other languages.
III. German	1. German 200 2. German 350 3. Three senior German 5. courses	6.) Any senior German course 7.) and a senior Arts option or Two approved courses in history, English or other languages
IV. Latin	1. Latin 200 2. Latin 300 3. Three approved senior 5. courses	6.) Two approved courses in 7.) Latin or Greek classics or Two approved courses in history, English, or other languages.
V. Other Foreign Languages	1.) 2. Any five 3. approved 4. courses 5.)	6.) Two approved courses in 7.) history, English, or other languages.

DETAILS OF PROGRAMS

VI. Social Studies	1. History 200	5. Three approved social
	2. History 370	6. science or history courses,
	3. Geography 300	7. one of which must be in a
	4. An approved social science course, ju- nior or senior.	field other than history or geography. Two of these must be senior courses.
VII. Mathematics	1. Mathematics 211	6. Two senior mathematics
	2. Mathematics 281	7. courses
	3. Approved senior mathematics course	or
	4. Approved senior mathematics course	Two approved courses in a related field.
	5. Statistics 265	
VIII. Biological Sciences	1. Zoology 220	6. An approved senior Bot- any course
	2. Botany 271	7. An approved course in a biological or related science
	3. Chemistry 230	
	4. Chemistry 350	
	5. An approved senior Zoology course	
IX. Physical Sciences	1. Chemistry 230*	6. An approved senior physics or chemistry course
	2. Mathematics 211	7. An approved course in mathematics
	3. Physics 240**	or
	4. An approved senior chemistry course	An approved course in a physical science
	5. An approved senior physics course**	
*Chemistry 230 is to be selected as the first year course. Physics 240 should be selected during the second year.		
**Careful attention should be given to the mathematics prerequisites or corequisites for physics courses.		
X. Fine Arts	1. Art 230	6. Any two of the courses
	2. Art 240	7. listed under 4 and 5
Art	3. Art 200 or 250	or
	4. Art 330	Two approved options in a related field
	5. Art 300 or 400	
Music	1. Music 200	6. Any two of the courses
	2. Music 300	7. listed under 4 and 5
	3. Music 400 or 250	or
	4. Any two of Music	Two approved options in a related field
	5. 250, 400 or 350	

(5) Use of Options

Students should give careful consideration to the various opportunities provided by the two Arts and Science options and the two Education options in the Secondary B.Ed. program. These may be regarded as "free" options and used to explore a variety of fields; or they may be patterned in such a way as to provide some preparation for certain functions related to teaching in the Secondary School.

The following are illustrative of the ways in which these courses may be patterned.

1. *Guidance in the Secondary School*
Two of Ed. PSY 308, 310 or 478
and
Two of Soc. 360, Soc. 370, Psych. 352 or Psych. 382
or
Statistics 265 or 215 and one of Soc. 340 or Psych. 352 or Psych. 382.
2. *Further Specialization in Teaching Field*
Two Arts and Science courses in the major field
One advanced Curriculum and Instruction course
One supporting Education Option
3. *Physical Education in the Secondary School*
Physical Education 232 and 332
Two supporting Education options
4. *Teaching in the Junior High School*
Two Arts and Science options (selected to give breadth)
Two Education Options

STUDENTS ARE URGED TO PLAN THE PATTERNING OF THESE COURSES IN CONSULTATION WITH THE DEAN OR THE DEPARTMENT HEAD.

DETAILS OF PROGRAMS

C. Special Transfer Second Year for Certificated Teachers

Certificated teachers are granted credit for the first year of the general B.Ed. program for their Normal School or Junior E training, provided that this training was of not less than seven months' duration.

If such certificated teachers have clear matriculation into the Faculty of Education, they will be admitted to the second year of the program. A special program for the second year is provided in order that all essential courses will be included.

It will be noted that candidates taking the Elementary Route have six courses to do; those entering the Secondary Route have seven. The reason for this extra load is that all one-year training was in the field of elementary education.

Students take five courses in a winter session. A summer session is required to complete the *transfer* second year.

Upon completion of the special second year, candidates are eligible for an Interim Standard Certificate.

Note: Students entering the Secondary Route must present credit in *at least one course in the major field* as prerequisite to the second and third courses in the major field and as prerequisite to Curriculum and Instruction course in the transfer year. Hence the summer session will normally be taken *prior* to the transfer year.

Second Year

Elementary Route

1. English 240
2. Major
3. Major
4. Senior Education Option
5. Arts and Science Option
6. Arts and Science Option

Secondary Route

1. Major
2. Major
3. Approved Social Science or History
4. English 240
5. Curriculum and Instruction (Major Field)*
6. Major
7. Major or Arts and Science Option

*Some observation and student teaching may be required of students registered in these courses.

Third and Fourth Years

As prescribed for these years in the regular programs for the B.Ed. degree, Elementary or Secondary route.

D. B.Ed. in Industrial Arts

Candidates wishing to prepare for teaching in general shop should follow the program headed Basic General Program. It provides for certification on the completion of the second and third years and for the B.Ed. in Industrial Arts degree on completion of the fourth year. Candidates proposing to specialize in unit shop will find details under the heading Special Programs below.

The first three years of the Basic General Program are offered only at Calgary; the fourth year at Edmonton and Calgary.

A few Industrial Arts courses will be offered each year at the Summer Session in Calgary. These are primarily for the convenience of students who are already enrolled in the B.Ed. Program, Secondary Route, who wish to major in Industrial Arts and so qualify for Industrial Arts certificates.

(1) *Basic General Program*

First Year

1. Ed. FDN 201
2. Sociology 202
3. Ed. PSY 276
4. A junior Arts option
5. Ed. IA 241
6. Ed. IA 242
7. Ed. IA 246
8. Physical Education 218 or 228.

Second Year

1. English 240
2. Ed. ADM 261
3. Ed. IA 280
4. Ed. CI 250 (Student Teaching)
5. Ed. IA 341
6. Ed. IA 244
7. Ed. IA 342

Certification: Interim Standard S Certificate

Third Year

1. Philosophy 241
2. A junior or senior A, B, C option
3. A senior A, B, C option
4. Ed. IA 248
5. Ed. IA 441
6. Ed. IA 346

Certification: Interim Professional Certificate

DETAILS OF PROGRAMS

Fourth Year (New Program)

1. Ed. FDN 492
2. Ed. PSY 476
3. A senior A, B, C option
4. Ed. IA 347
5. Ed. IA 344
6. Ed. IA 349
7. Ed. IA 345

Fourth Year (Old Program—Applicable 1963-64)

1. Philosophy 241
2. Ed. FDN 492
3. Three senior Division A, B, C options
4. }
5. }

(2) Special Programs for Teachers of Unit Shop Subjects

Candidates may follow one of three routes according to their status on entry. In all cases a regular matriculation standing is required.

Route 1: (This program may be entered only with permission of the Dean) For those who propose to specialize in Unit Shop subject in the third year. Students in this program may by completing requirements of the B.Ed. in Industrial Arts degree, and by completing fifteen months of approved industrial experience, qualify for a certificate of apprenticeship from the Apprenticeship Board of Alberta.

APPROVED INDUSTRIAL EXPERIENCE is interpreted to mean that the candidate has filed an apprenticeship application with the Apprenticeship Board at the time of commencement of industrial experience. The Apprenticeship Board should be advised of changes of place of employment in order that progress may be checked by the field staff.

QUALIFY FOR CERTIFICATE OF APPRENTICESHIP is interpreted to mean that the candidate has passed a fourth year apprenticeship examination.

Route 2: For those with Alberta journeyman's status in a unit shop specialty offered in Alberta high schools. A special three-year program is required as detailed below.

Route 3: For those who have completed an approved two-year program at the Institute of Technology and Art and who have completed a minimum of ten months' approved work in industry. The same three-year program is required as in Route 2.

Route 1: The first and second years of the basic general program will be followed. The third year becomes one of unit shop specialization. It may be entered only upon the recommendation of the Dean.

Third Year (Unit Shop Program)

1. A junior or senior Arts and Science option.*
2. A junior or senior Arts and Science option.*
3. Unit shop in Wood —
Ed. IA 441
Shop, 4½ days per week
or
3. Unit Shop in Auto Mechanics —
Shop, 5 days per week
or
3. Unit Shop in Electricity —
Shop, 4 days per week
Ed. IA 344
or
3. Unit shop in Metal —
Shop, 5 days per week

Certification: Interim Professional Certificate

Fourth Year

1. Ed. FDN 492
2. Ed. PSY 476
- 3, 4, 5: Sr. Arts and Science options.

The programs in unit shop will ordinarily continue for some weeks beyond the University term in the spring. For details on this point, consult or write the Dean. Regular examinations will be written in Ed. IA 441 and 344 where taken. Shop performance will be appropriately assessed and marks recorded.

Route 2: Candidates who have acquired Alberta journeyman's status in an area of unit shop specialization taught in Alberta high schools and who present clear matriculation to the Faculty of Education may enter upon a special three-year program leading to certification and a degree.

- (a) First Year: advance credit.
- (b) Special Second Year:
 1. English 240
 2. Ed. PSY 276
 3. Ed. ADM 261
 4. Ed. IA 280
 5. Ed. CI 250 (Student Teaching)
 6. One junior Arts and Science option.

Certification: Interim Standard S Certificate.

- (c) Special Third Year:
 1. One shop course in Unit shop in area of Journeyman's Specialization
 2. One shop course (approved option)
 3. Ed. IA 241
 4. Junoir Arts and Science option (minor field)
 5. Senior Arts and Science option
(Certification: Interim Standard S Certificate)
 6. Philosophy 241 or alternate.

- (d) Special Fourth Year:
 1. Ed. PSY 476
 2. Ed. FDN 492
 3. One senior Arts and Science option (minor field)
 4. One senior Arts and Science option
 5. One senior Arts and Science option

(Qualifies for the B.Ed. degree in Industrial Arts)

Certification: Interim Professional Certificate.

Note: The intent of this change is to bring the Route 2 program in line with the rearrangement of the basic programs as outlined above.

DETAILS OF PROGRAMS

Route 3: For information about the special* two-year program at the Southern Alberta Institute of Technology at Calgary, candidates should write direct to the Principal of the Institute. The subsequent University program is that detailed for Route 2.

*At the present time approved courses are (a) Automotives, (b) Electricity and (c) Drafting. Graduates of other Institute of Technology courses may be granted credit on an individual basis for unit courses which were completed during their program of instruction.

(3) *Graduation Requirements*

1. Basic graduation requirements are as outlined on p. 00.
or
2. *For students admitted before January 3, 1963, and wishing to take advantage of these regulations:*

Of the courses taken for the B.Ed. in Industrial Arts degree, students must obtain second class standing or better in no fewer than SIX; THREE must be Junior or Senior Arts and Science or Senior Education courses.

This alternative applies only to students who will graduate before June 30, 1966.

E. B.Ed. Programs for Holders of Approved Degrees

All students in B.Ed. programs for holders of approved degrees, who register in Calgary, will engage in orientation activities during registration week. Please report to the Student Teaching Office, A/E 231, or to Room A/E 233, on Monday, September 23 at 9:00 a.m.

(1) *Program for Teachers in the Secondary School*

- (1) Ed. ADM 461
- (2) Ed. PSY 476
- (3) Ed. CI 450 (student teaching)
- (4) Ed. FDN 492
- (5) Ed. CI (Major Field)
- (6) Ed. FDN 414
or
Ed. PSY 478
(Satisfactory completion of these six courses permits the student to obtain the Interim Professional Certificate)
- (7) Ed. PSY 478 or Ed. FDN 414
- (8) Approved Senior Education Option
- (9) Approved Senior Education Option
- (10) Approved Senior Arts and Science Option
- (11) Approved Senior Arts and Science Option
- (12) Approved Senior Arts and Science Option
(Satisfactory completion of all twelve courses permits the student to obtain the B.Ed. degree. Also see notes below.)

General Notes

- i. Students who present a degree which does not contain the equivalent of a major as required in the regular secondary route B.Ed. will be required to make up such deficiencies before proceeding with this program.
- ii. Beginning in September, 1963, a student will be required to present a basic course in psychology as a prerequisite for Ed. PSY 476.
- iii. Beginning in September, 1963, a student will be required to present a basic course in philosophy as a prerequisite for Ed. FDN 492.
- iv. Holders of approved degrees who do not possess credit in the prerequisites for Ed. Psy. 476 and/or Ed. Fdn. 492 will be permitted to register in a six-course program leading to the Standard S Certificate.

The program will take one of the following forms:

1. Ed. ADM 461
2. Ed. CI (Major Field)
3. Ed. CI 450 (Student Teaching)
4. Ed. FDN 414 or Ed. PSY 478

Lacking Ed. FDN 492 prerequisite	Lacking Ed. PSY 476 prerequisite	Lacking both Ed. PSY 476 and Ed FDN 492 prerequisites
5. Ed. PSY 476	5. Ed PSY 276	5. Ed. PSY 276
6. Phil. 241 or alternate	6. Ed.FDN 492	6. Phil. 241 or alternate

At this point the Standard S Certificate will be recommended.

DETAILS OF PROGRAMS

7. Ed. FDN 492

7. Ed PSY 476

7. Ed. PSY 476
8. Ed. FDN 492

At this point the Professional Certificate will be recommended.

8. Ed. FDN 414 or
Ed. PSY 478

8. Ed. FDN 414 or
Ed. PSY 478

9. Ed FDN 414 or Ed.
PSY 478

9. Senior Ed. option

9. Senior Ed. option

10. Senior Ed. option

10. Senior Ed. option

10. Senior Ed. option

11. Senior Ed. option

11. Senior Arts/Sc.
option

11. Senior Arts/Sc.
option

12. Senior Arts/Sc. op-
tion

12. Senior Arts/Sc.
option

12. Senior Arts/Sc.
option

13. Senior Arts/Sc op-
tion

13. Senior Arts/Sc.
option

13. Senior Arts/Sc.
option

14. Senior Arts/Sc. op-
tion

- v. Provision is made for the planning of the options to permit further specialization in subject fields, guidance and counselling, and the like.
- vi. Certificated Candidates (Jr. E. or equivalent)will present Ed. PSY 476, Ed. FDN 492 and a CI course in the major field for the Professional Certificate. To obtain the B.Ed. degree, such candidates will present, in addition, items 7 to 12 (inclusive) of the program.
- vii. Students interested in qualifying for a Master's degree rather than for the B.Ed. following the Professional Certificate year, should consult the appropriate department regarding requirements for graduate study.
- xiii. The holder of an approved Honors or Masters degree may qualify for the B.Ed. degree by completing the first nine of the required courses and meeting the graduation requirements.

(2) *Program for Teachers in the Elementary School*

(1) Ed. ADM 461

(2) Ed. PSY 476

(3) Ed. CI 400 (Student Teaching)

(4) Ed. FDN 492

(5) Ed. CI 402

(6) Ed. CI 404

(Satisfactory completion of these six courses permits the student to obtain the Interim Professional Certificate.)

(7) Approved Senior Education Option

(8) Approved Senior Education Option

(9) Approved Senior Education Option

(10) Approved Senior Arts and Science Option

(11) Approved Senior Arts and Science Option

(12) Approved Senior Arts and Science Option

(Satisfactory completion of all twelve courses permits the student to obtain the B.Ed. degree. Also see notes below.)

General Notes

- i. Students who present a degree which does not contain course work suitable for teaching in the elementary school will be required to make up such deficiencies before proceeding with this program.
- ii. Beginning in September, 1963, a student will be required to present a basic course in psychology as a prerequisite for Ed. PSY 476.
- iii. Beginning in September, 1963, a student will be required to present a basic course in philosophy as a prerequisite for Ed. FDN 492.
- iv. Holders of approved degrees who do not possess credit in the prerequisites for Ed. PSY 476 and/or Ed. FDN 492 will be permitted to register in a six-course program leading to the Standard E Certificate.

The program will take one of the following forms:

1. Ed. ADM 461
2. Ed. CI 402
3. Ed. CI 404
4. Ed. CI 400

Lacking Ed. FDN 492 prerequisite	Lacking Ed. PSY 476 prerequisite	Lacking both prerequisites
5. Ed. PSY 476	5. Ed. PSY 276	5. Ed. PSY 276
6. Phil. 241 or alternate	6. Ed. FDN 492	6. Phil 241 or alternate

At this point the Standard E Certificate will be recommended.

7. Ed. FDN 492	7. Ed. PSY 476	7. Ed. PSY 476 8. Ed. FDN 492
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At this point the Professional Certificate will be recommended.

8. Senior Ed. option	8. Senior Ed. option	9. Senior Ed. option
9. Senior Ed. option	9. Senior Ed. option	10. Senior Ed. option
10. Senior Ed. option	10. Senior Ed. option	11. Senior Ed. option
11. Senior Arts/Sc. option	11. Senior Arts/Sc. option	12. Senior Arts/Sc. option
12. Senior Arts/Sc. option	12. Senior Arts/Sc. option	13. Senior Arts/Sc. option
13. Senior Arts/Sc. option	13. Senior Arts/Sc. option	14. Senior Arts/Sc. option

- v. Provision is made for the planning of options to permit specialization in subject fields, primary education, reading, education of exceptional children, and the like.
- vi. Certificated Candidates (Jr. E. or equivalent) will present Ed. PSY 476 and Ed. FDN 492 for the Professional Certificate. To obtain the B.Ed. degree, such candidates will present, in addition, items 7 to 12 (inclusive) of the program.
- vii. Students interested in qualifying for a Masters degree rather than for the B.Ed., following the Professional Certificate year, should consult the appropriate department regarding requirements for graduate study.
- viii. The holder of an approved Honors or Masters degree may qualify for the B.Ed. degree by completing the first nine of the required courses and meeting graduation requirements.

DETAILS OF PROGRAMS

(3) *Graduation Requirements*

1. To be recommended for the B.Ed. degree a student on this program must obtain a passing mark or better in each course and obtain a 60% average in all courses credited toward the degree. (Those who transfer to the B.Ed. program, University of Alberta, with advance standing will be required to maintain a 60% average on all courses completed at the University of Alberta toward the B. Ed. degree.)
2. A student on this program will *not* be allowed to write more than *two* supplemental examinations for the purpose of obtaining passing marks or raising his average to the required 60%.
3. A student will not be allowed to write more than *two* supplemental examinations in any one year.
4. Students admitted prior to January 2, 1963, will be allowed to graduate, provided they do so before June 30, 1965, by taking advantage of these graduation requirements or of those set forth in the Calendar of the Faculty of Education for 1962-63.

F. Advanced Study in Education

(1) *Graduate Diploma Programs in Education*

The Faculty of Education sponsors a series of diploma programs providing additional special qualification in designated areas. Admission to the Graduate Diploma Program will be granted to holders of an approved degree and a Professional (in some Departments the Permanent Professional) Teaching Certificate or its equivalent. Normally, courses taken prior to the 1963 Summer Session may not be credited toward the Diploma unless the student is currently a candidate for the M.Ed. degree. Students who now hold the M.Ed. degree may not obtain the Diploma on the basis of course marks obtained on the M.Ed. degree program. Courses credited toward the diploma may not also be credited toward the B.Ed. degree. The pass mark for courses to be credited toward the Diploma is 65%. Residence requirements for the Diploma may be met in consecutive summer sessions or in a winter session.

Diploma programs are offered by all Departments of the Faculty in *Edmonton*. Inquiries should be directed to the office of the *Department* concerned.

The Faculty of Education in *Calgary* will offer for the first time in 1963-64, selected Graduate courses in four Department:

- Ed. Adm. 525—Educational Supervision (half course), and
- Ed. Adm. 563—Administrative Role of Principals and Superintendents (half course);
- Ed. CI. 580—Curriculum Development;
- Ed. Fdn. 594—History of Education;
- Ed. Psy. 508—Problems in Educational and Vocational Guidance.

Inquiries about Calgary diploma programs should be directed to Department Heads as follows:

Curriculum and Instruction, Dr. S. A. Lindstedt; Educational Administration, Dr. J. E. Cheal; Educational Foundations, R. N. Anderson; and Educational Psychology, Dr. J. G. Woodsworth.

(2) *Graduate Degrees in Education*

All candidates for advanced degrees register with the Faculty of Graduate Studies which administers graduate programs throughout the University. At the present time, advanced degrees programs are administered *only in Edmonton*, although some of the course work for these programs may be taken in Calgary.

In the Faculty of Education graduate work is offered for the preparation of teachers, supervisors, guidance workers, administrators and other educational specialists, and may lead to the degrees of Master of Education, Doctor of Education and Doctor of Philosophy. Candidates for these advanced degrees specialize in terms of the departmental organization of the Faculty of Education as follows:

Department of Elementary Education: curriculum and instruction in kindergarten, primary and elementary education. Head—Dr. W. H. Worth.

Department of Secondary Education: curriculum and instruction in secondary education. (Grades VII-XII). Head—Dr. L. W. Downey.

Department of Educational Foundations: philosophy, sociology, and history of education. Head—Dr. B. E. Walker.

Department of Educational Psychology: child and adolescent psychology, educational psychology, guidance, mental hygiene, special education, clinical psychology, tests and measurements. Head—Dr. G. M. Dunlop.

Department of Educational Administration: school administration (elementary and secondary), general supervision, school finance and business administration, chief administrative roles. Head — Dr. A. W. Reeves.

Department of Industrial and Vocational Education: Industrial Arts and Vocational Education. Head—Dr. H. R. Ziel.

In order to meet the needs and interests of candidates, the departments permit considerable flexibility in the programs leading to advanced degrees. In general, students pattern their courses from the offerings of the department of their choice supplemented by approved courses from other departments of the University. Normally a candidate for the master's degree must present a program consisting of six courses and a minor thesis. A candidate for the master's degree is required to spend at least one academic year in study and research in residence at the University of Alberta. A candidate for the doctor's degree (if he already holds a master's degree) is normally required to spend two academic years in study and research in residence at the University of Alberta.

Graduate courses in education are offered in both the regular and the summer sessions.

Initial Procedure: Students who wish to inquire about graduate programs should address all preliminary inquiries to the Dean of the Faculty of Graduate Studies, University of Alberta, Edmonton.

After a student has decided upon an area of specialization, he should communicate directly with the appropriate department head and, if possible, arrange for an interview. By this means the student's eligibility will be determined and further information given about the degree programs available in the Department.

(3) *Special Students*

A student holding a B.Ed. degree or the equivalent and not desiring to register for a graduate degree or not meeting all the requirements for admission to the Faculty of Graduate Studies, may register in the Faculty of Education as a *special student*.

VIII. STAFF OF THE FACULTY OF EDUCATION, CALGARY

DEAN—H. S. BAKER

ASSISTANT TO DEAN—E. L. PITT

DEPARTMENT OF CURRICULUM AND INSTRUCTION:

Professors — T. G. Finn, S. A. Lindstedt (Head).

Associate Professors — A. A. Gibb, E. M. King, B. M. Newton, S. Norris.

Assistant Professors — M. A. Beaton, M. Chorny, P. Eccles, W. E. Gandy, G. L'Abbe.

DEPARTMENT OF FOUNDATIONS OF EDUCATION:

Associate Professor — R. N. Anderson (Head).

Assistant Professors — J. E. Bowen, R. F. Lawson, D. F. Swift.

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY:

Professor — J. G. Woodsworth (Head).

Associate Professor — A. G. Storey.

Assistant Professors: S. S. Blank, B. P. Frost, R. A. Lambert, T. E. Linton, J. G. Snider.

DEPARTMENT OF EDUCATION ADMINISTRATION AND PRACTICE —TEACHING:

Associate Professor — J. D. Aikenhead, J. E. Cheal (Head).

Assistant Professor — A. L. Brown.

DEPARTMENT OF FINE ARTS:

Associate Professors — F. E. Churchley (Head), H. B. Stadelbauer (Executive Officer)

Assistant Professors — E. M. Dodd, Q. D. Doolittle, S. G. Finn, H. Kiyooka.

IX. DETAILS OF COURSES

--Note: The hours of instruction per week for both terms are shown at the top of each course description. The first figure in each term indicates lecture hours and the second, laboratory hours. Courses which may be taught in either term are indicated by the words "half-year." Even numbered courses are full courses; odd numbered courses are half courses.

I. Curriculum and Instruction

Elementary Route

A. B.Ed. Program

1. Student Teaching

Ed. CI 200—Student Teaching in the Elementary Schol (100 hrs.)
J. D. Aikenhead and Associates.

2. Required Courses

Ed. CI 205—Curriculum and Instruction in Elementary School
Social Studies—T. G. Finn and W. E. Gandy.
(3L; 0-0) or (0-0; 3L) or (1½L; 1½L)

Ed. CI 209—Curriculum and Instruction in Elementary School
Art—H. B. Stadelbauer and E. M. Dodd.
()L; 0-0) or (0-0; 3L) or (1½L; 1½L)

Through the instructor in Ed. 209 the student will pay a fee of \$4.00 to cover the cost of instructional supplies.

Ed. CI 213—Curriculum and Instruction in Elementary School
Music—F. E. Churchley and Q. D. Doolittle.
()L; 0-0) or (0-0; 3L) or (1½L; 1½L)

Ed. CI 221—Curriculum and Instruction in Elementary School
Reading—B. M. Newton and E. M. King.
(3L; 0-0) or (0-0; 3L)

Ed. CI 227—Curriculum and Instruction in Elementary School
Mathematics—S. A. Lindstedt (3L; 0-0) or (0-0; 3L)

Ed. CI 231—Curriculum and Instruction in Elementary School
Science—S. Norris and P. Eccles
(3L; 0-0) or (0-0; 3L) or (1½; 1½L)

Ed. CI 237—Curriculum and Instruction in Elementary School
Language—B. M. Newton and E. M. King
(3L; 0-0) or 0-0; 3L)

3. Options

Ed. CI 306—Enterprise Education—T. G. Finn and W. Gandy (3-0; 3-0)

A course for certificated teachers. This course is designed to establish a firmer appreciation of the principles basic to the enterprise method and to assist teachers to improve their competence where deficiencies in the use of the enterprise method are most apparent.

Prerequisites: Ed. 206 or Ed. CI 284 or permission of instructor.

DETAILS OF COURSES

- Ed. CI 310—Art in the Elementary School—H. B. Stadelbauer
(3-0; 3-0)
Comparative survey of curricula and methods; appraisal of instructional materials; further development of classroom performance skills; special problems in art education.
Prerequisites: Ed. CI 209 or Ed. CI 290 or permission of instructor.
- Ed. CI 314—Music in the Elementary School—F. E. Churchley
(3-0; 3-0)
Comparative study of curricula and methods; appraisal of instructional materials, further development of classroom performance skills; special problems in music education.
Prerequisite: Ed. CI 213 or Ed. CI 292 or permission of instructor.
- Ed. CI 322—Reading at the Upper Elementary and Secondary Levels—B. M. Newton (3-0; 3-0)
Organization of the basic reading program, reading problems in the content subjects, individualized instruction, and the selection of reading materials.
Prerequisites: Ed. CI 222 or Ed. CI 288 or permission of instructor.
- Ed. CI 328—Arithmetic in the Elementary and Junior High School Grades — S. A. Lindstedt (3-0; 3-0)
The mathematics curriculum; content, methods, instructional materials, evaluation; diagnosis and treatment of learning difficulties; and experimental programs.
Prerequisites: Ed. CI 286 or Ed. CI 273 or permission of instructor.
- Ed. CI 332—Science in the Elementary and Junior High School Grades — P. Eccles (3-0; 3-0)
A course in the teaching of science programs of the elementary and junior high school grades; development of appropriate laboratory equipment; selection of materials of instruction; field work.
Prerequisites: Ed. CI 286 or Ed. CI 275 or 277 or permission of instructor.
- Ed. CI 336—French in the Elementary School—G. L'Abbé
(3-0; 3-0)
Development of the French program; aims, content, grade placement and sequence methods, instructional materials and teaching aids; adaptations in bilingual communities.
Prerequisites: French 200 and 330 or permission of instructor.

B. *B.Ed. After-Degree Program*

1. *Student Teaching*

Ed. CI 400—Observation and Student Teaching—J. D. Aikenhead
and Staff (100 hours)

2. *Required Courses*

Ed. CI 402—Curriculum and Instruction in the Elementary School
I—Staff (3-3; 3-3)

Ed. CI 404—Curriculum and Instruction in the Elementary School
II—Staff (3-1; 3-1)

3. *Options* As for undergraduates

DETAILS OF COURSES

Secondary Route

A. B.Ed. Program

1. *Student Teaching*

Ed. CI 250—Observation and Student Teaching in the Secondary School—A. D. Aikenhead and Staff. (100 hrs.)

2. *Required Courses* (ONE to be selected for major field)

Ed. CI 254—Curriculum and Instruction in Secondary School English — M. Chorny (3-0; 3-0)
Prerequisites or Corequisites: Three full courses in the major pattern.

Ed. CI 258—Curriculum and Instruction in Secondary School Foreign Languages—G. L'Abbé (3-0; 3-0)
Prerequisites or Corequisites: Three full courses in the major pattern.

Ed. CI 266—Curriculum and Instruction in Secondary School Social Studies—W. Gandy (3-0; 3-0)
Prerequisites or Corequisites: Three full courses in the major pattern.

Ed. CI 270—Curriculum and Instruction in Secondary School Mathematics—A. A. Gibb (3-0; 3-0)
Prerequisites or Corequisites: Three full courses in the major pattern.

Ed. CI 274—Curriculum and Instruction in Secondary School Biological Science—P. Eccles (3-0; 3-0)
Prerequisites or Corequisites: Three full courses in the major pattern.

Ed. CI 278—Curriculum and Instruction in Secondary School Physical Sciences—S. Norris (3-0; 3-0)
Prerequisites or Corequisites: Three full courses in the major pattern.

Ed. CI 290—Curriculum and Instruction in Secondary School Art —H. Stadelbauer (3-0; 3-0)
Prerequisites or Corequisites: Three full courses in the major pattern.

Ed. CI 292—Curriculum and Instruction in Secondary School Music — F. E. Churchley (3-0; 3-0)
Prerequisites or Corequisites: Three full courses in the major pattern.

Ed. CI 298—Curriculum and Instruction in Secondary School Physical Education—D. F. Macintosh (2-0; 2-0)
Prerequisites and Corequisites: Two full courses in physical education
(Note: This course will be offered *only* in 1963-64)

3. *Options*

Ed. CI 456—Advanced Curriculum and Instruction in Secondary School English—M. Chorny (3-0; 3-0)
Prerequisites: Two courses in English and Ed. CI 254 or 454 or consent of instructor.

Ed. CI 480—Advanced Curriculum and Instruction in Secondary School Physical Sciences—S. Norris (3-0; 3-0)
Prerequisites: Two courses in physical sciences and Ed. CI 278 or 478 or consent of instructor.

B. *B.Ed. After-Degree Program*

1. *Student Teaching*

Ed. CI 450—Observation and Student Teaching in the Secondary School—J. D. Aikenhead and Associates (100 hrs.)

2. *Required Courses* (ONE to be selected for major field)

Ed. CI 454—Curriculum and Instruction in Secondary School English—M. Chorny (3-0; 3-0)
Prerequisites or Corequisites: Five full courses in the major pattern.

Ed. CI 458—Curriculum and Instruction in Secondary School Foreign Languages—G. L'Abbé (3-0; 3-0)
Prerequisites or Corequisites: Five full courses in the major pattern.

Ed. CI 466—Curriculum and Instruction in Secondary School Social Sciences—T. G. Finn and W. Gandy (3-0; 3-0)
Prerequisites or Corequisites: Five full courses in the major pattern.

Ed. CI 470—Curriculum and Instruction in Secondary School Mathematics—S. A. Lindstedt (3-0; 3-0)
Prerequisites or Corequisites: Five full courses in the major pattern.

Ed. CI 474—Curriculum and Instruction in Secondary School Biological Sciences—P. Eccles (3-0; 3-0)
Prerequisites or Corequisites: Five full courses in the major pattern.

Ed. CI 478—Curriculum and Instruction in Secondary School Physical Sciences—S. Norris (3-0; 3-0)
Prerequisites or Corequisites: Five full courses in the major pattern.

Ed. CI 490—Curriculum and Instruction in Secondary School Art—H. Stadelbauer (3-0; 3-0)
Prerequisites or corequisites: Five full courses on the mapor pattern.

Ed. CI 492—Curriculum and Instruction in Secondary School Music—F. E. Churchley (3-0; 3-0)
Prerequisites or corequisites: Five full courses on the major pattern.

3. *Options*

As for undergraduates.

C. *Graduate Courses*

Ed. CI 580—Curriculum Development—H. S. Baker and Associates (3-0; 3-0)
Curriculum research, theory and practice with particular reference to curriculum aims, content, organization, and change.

II. Educational Foundations

- Ed. FDN 201—*Introduction to Education*—J. E. Bowen, D. F. Swift, R. F. Lawson (2-0; 2-0)
An introductory course in education stressing the historical and sociological approaches to educational problems. Some attention will be given to basic procedures and methods.
- Ed. FDN 414—*Sociology of the School*—H. Zentner, D. Swift (3-0; 3-0)
Study of the school as a social institution in the changing society. (This course is the same as Sociology 414)
- Ed. FDN 492—*Philosophy of Education*—R. N. Anderson (3-0; 3-0)
Philosophical bases of education, with particular reference to values, aims, curriculum, and the education process.
- Ed. FDN 594—*History of Education*—J. Bowen (3-0; 3-0)
History of education from the Greeks to modern times, placing emphasis on great figures and major trends. The history of modern education in Canada, Britain, America, France, Germany, Denmark and Russia. Great issues in education: The influence of political, economic, social and religious institutions on education; theories of the role of education in the modern state; philosophy and education; psychology and education.

III. Educational Psychology

- Ed. PSY 276—*Introduction to Educational Psychology*—Staff (3-0; 3-0)
An introduction to childhood and adolescence, stressing physical, mental, social, emotional, and personality development; the psychology of learning and of the special learning areas; the application of psychological principles to classroom practice.
- Ed. PSY 308—*Guidance*—J. G. Woodsworth (3-0; 3-0)
Basic principles and techniques of guidance; case studies, interviews, records, with emphasis on scholastic and personal guidance; introduction to the tests and measures most commonly used in guidance.
Prerequisites: Ed. PSY 276 or equivalent.
- Ed. PSY 310—*Mental Hygiene in Teaching*—B. P. Frost (3-0; 3-0)
Principles of mental hygiene; the dynamics of behavior, mental health of the teacher; classroom application of mental hygiene principles.
Prerequisites: Ed. PSY 276 or equivalent.
- Ed. PSY 458—*Psychology and Education of Emotionally Disturbed Children* (3-0; 3-0)
The psychological characteristics of emotionally disturbed or socially maladjusted children; their education in ordinary and special classrooms.
Prerequisites: Ed. PSY 354 and two years of successful teaching.
- Ed. PSY 474—*Education Clinic*—B. P. Frost (3-3; 3-3)
Training in the measurement of intelligence, achievement, interest, aptitudes and adjustment of school children. Laboratory experience in the Education Clinic in measurement, diagnosis and remedial treatment of school children.
Prerequisite: Education 476.

- Ed. PSY 476—*Educational Psychology*—J. G. Woodsworth and Staff (3-0; 3-0)
Individual differences; psychology of learning and forgetting; motivation; personality, adjustment, and mental hygiene; introduction to evaluation and the testing program.
Prerequisites: Ed. PSY 276, Psychology 202 or equivalent.
- Ed. PSY 478—*Measurement and Evaluation*—A. G. Storey (3-0; 3-0)
Measurement of classroom achievement; teacher-made and standardized tests; interpretation and use of test results; evaluation of non-academic achievements; recording and reporting pupil progress.
Prerequisite: Ed. PSY 276 or equivalent.
- Ed. PSY 508—*Problems in Educational and Vocational Guidance* (3-0; 3-0)
Problems in the prediction and guidance of academic success; theories and principles of vocational choice and vocational adjustment; applications of available knowledge and instruments to school guidance.
Prerequisite or corequisite: Ed. PSY 308.

IV. Educational Administration

- Ed. ADM 261—*Educational Administration*—J. D. Aikenhead and A. F. Brown (2-0; 2-0)
A basic course in educational administration dealing with topics of special significance to the classroom teacher. Topics in this course include: The Alberta School System, Professional Ethics, School Law.
- Ed. ADM 461—*Educational Administration*—A. F. Brown
For holders of B.A., B.Sc., and other degrees. For a description of this course see Ed. ADM 261.
- Ed. ADM 525—*Educational Supervision*—J. Cheal and A. F. Brown (0-0; 3-0)
A half year course containing topics selected from: The supervisory functions of staffing, consulting, and motivating, including such topics as selection and placement, teacher evaluation, in-service training, individual consultation, leadership, teacher morale, use of authority, and organization for supervision.
- Ed. ADM 561—*Principles of Educational Administration* (3-0; 0-0)
—J. Cheal and A. F. Brown
A half year course containing topics selected from: Administration analyzed into its major activities: planning, organizing, directing, co-ordinating and controlling. Illustrations of these activities in the field of education. Relationship of school administration to political science, law, business administration, sociology and psychology. Importance of a guiding philosophy. Influence of democratic ideology on administrative theory and practice. Basic principles of school administration and their application to typical administrative problems.

V. Industrial Arts

- Ed. IA 241-341—*Industrial Arts—Mechanical Drawing* (First and Second Years)—G. R. Howarth (1-2; 1-2)
Use and care of drafting instruments and drafting equipment. Single-stroke lettering. Geometric drawing, including angles, polygons, tangents and eclipses, with problems. The making and use of scales. Mechanical and architectural conventions. Conventional drawing of bolts and screws. Simple blueprint reading. Orthographic projection, including sections and auxiliary views. Cabinet and isometric drawing, shop sketching. Projection perspective and the plan method of mechanical perspective. Assembly and detail drawing. Surface development drawing, including shapes based on type forms and triangular methods. Simple building drawing. Drawing of shop projects involving simple design. Tracing and blue-printing.
- Ed. IA 242 — *Industrial Arts—Woodwork*—M. McDougall (2-4; 2-4)
Care, adjustment and repair of hand tools. Basic tool procedures involving instruction and practice in the use of all the commonly used hand tools. Wood finishing; application of the elementary types of finishes, paints, stain and varnish, enamel, etc.
- Ed. IA 244 — *Industrial Arts—Electricity*—D. Gaudette (3-3; 3-3)
Electron theory; sources of electrical energy; electrical units; electrical circuits; Ohm's Law; Canadian Electrical Code; electro-magnetic induction, Lenz's Law; electrical instruments; direct current motors and generators.
- Ed. IA 246 — *Industrial Arts—Metal Work*—J. D. Harron (2-4; 2-4)
Common metals and their alloys; elementary metallurgy, sheet metal work; introduction to welding, forging, casting, heat treating; bench work.
- Ed. IA 248 — *Industrial Arts—Automotive Mechanics*—F. Wynne (2-4; 2-4)
The automobile and its power plant; general construction of the automobile; auxiliary systems; fuel, carburetion, lubricating, cooling, clutch and gear box; rear axles; drive shafts and universal joints; front axles and steering gears, brakes, miscellaneous.
- Ed. IA 280 — *Educational Method for Industrial Art Students*—S. A. Lindstedt and D. A. Gaudette (3-0; 3-0)
Required of all B.Ed. in Industrial Arts candidates qualifying for the Junior Diploma (Standard S Certificate) in winter session. The first half of the course will be devoted to a study of the basic principles of teaching methods as they apply to a variety of subject areas in the high school. The second half of the course will deal with special methods and techniques specific to industrial arts.
- Ed. IA 342 — *Industrial Arts—Woodwork*—M. J. Tomlinson (2-4; 2-4)
Further development of proficiency in using hand tools. Use of woodworking machines of various types. Filing and fitting hand saws. Wood finishing; further development in the application of various types of finishes (stained, shellacked, rubbed and waxed finishes).
Prerequisite: Ed. IA 242.
- Ed. IA 344 — *Industrial Arts—Electricity*—M. McDougall (2-4; 2-4)
Principles of alternating currents; single-phase induction motors; rectifiers; telephones; electronics; electro-magnetic waves; transformers.
Prerequisite: Ed. IA 244.

- Ed. IA 345 — *Industrial Arts—Welding*—R. Shearer (1-2; 1-2)
The theory and practice of oxy-acetylene and arc welding.
- Ed. IA 346 — *Industrial Arts—Metal Work*—G. H. Hare (2-4; 2-4)
Non-ferrous metals and their alloys; metallurgy; machine shop practice; forging, welding, casting and heat treating continued; advanced drill press and bench work.
- Ed. IA 347 — *Industrial Arts—Automotive Mechanics*—G. A. Sexton (1-2; 1-2)
Electric circuits of the automobile; battery ignition; generator, starting motor, lighting, horn and accessory circuits, tune-up, trouble diagnosis.
- Ed. IA 349 — *Industrial Arts—Handicrafts*—Marion F. Nicoll (3 hours—half year)
Procedures, materials and project development in media particularly suitable for the junior high school industrial arts program; leather, plastics, art metal, woodcraft novelties, wood carving.
- Ed. IA 441 — *Industrial Arts—Woodwork*—R. H. Cunningham (6 hours—half year)
Maintenance work (shop and equipment); refinishing; building construction.
Prerequisites: Ed. IA 242 and 342.

X. SPECIAL INFORMATION AND GUIDANCE FOR FIRST-YEAR STUDENTS

The courses of the Bachelor of Education program are of two main kinds: *education* courses and *arts and science* courses.

Education courses are normally given by members of the staff of the Faculty of Education, and are concerned with the theory and practice of teaching. They include the history and sociology of education, educational administration, educational psychology, educational philosophy, school curriculum and instruction, and practice teaching.

Arts and science courses are normally given by members of the staff of the Faculty of Arts and Science, and are concerned with general education and with the actual subject matter to be taught in schools. They include such studies as English, foreign languages, mathematics, the sciences, social studies, and the fine arts. Each student is required to choose one of these as a *major*: this should represent his special field of interest and in due course become his special teaching field.

Each student is required also to choose a *route—elementary* or *secondary*. The elementary route is for those who wish to become elementary school teachers; the secondary route, for those who wish to become high school teachers.

While the major must be chosen at the beginning of the first year, the route need not be chosen until the beginning of the second year. The first year of both programs is the same—i.e., common to both routes. This arrangement gives all students one full year in which to decide whether they wish to become elementary or high school teachers.

The nature and sequence of the four years of the B.Ed. program is, in general, as follows:

DETAILS OF COURSES

COMMON FIRST YEAR

Two full courses in Education —

a half-year course in the history and sociology of education, a half-year course in educational administration, and a course in educational psychology.

Three full courses in Arts and Science —

an introductory course in English, a course in the major field, and an optional course.

A course in Physical Education —

this is the compulsory course for all first year students.

Second Year

ELEMENTARY ROUTE

Five full courses in Education—

eight half-year courses in curriculum and instruction covering methods of teaching reading, language, social studies, mathematics, science, art, music and physical education in elementary grades, and one full course in practice-teaching.

One full course in Arts and Science
a course in the major or in some other area.

At the conclusion of this year, students are eligible for the Standard E Certificate. (Grades I-IX).

SECONDARY ROUTE

Two full courses in Education—

a course in curriculum and instruction in the major, and a course in practice teaching.

Three full courses in Arts and Science—

one in social science, one in the major and the third in the major field or in some other area.

At the conclusion of this year, students are eligible for the Standard S Certificate. (Grades IV-XI).

Third Year

One full course in Education—

a senior course in educational psychology.

Four full courses in Arts and Science—

an introductory course in philosophy, a course in social science, a course in the major field, and another course in the major field or in some other area.

Two full courses in Education—

a senior course in educational psychology and an education option.

Three full courses in Arts and Science—

an introductory course in philosophy, a course in the major and another course in the major field or in some other area.

At the conclusion of the third year, students of both routes are eligible for the Professional Certificate (Grades I-XII).

Fourth Year

*One full course in Education—
a course in educational philosophy.
One full course in Education or in
Arts and Science—
this is an option.*

*Three full courses in Arts and
Science—
one in the major and the other two
optional.*

*Two full courses in Education—
a course in educational philosophy
and an education option.*

*Three full courses in Arts and
Science—
one or more of these in the major
field.*

At the conclusion of this year students are eligible for the B.Ed. degree.

The first-year program consists of the following courses:

1. Ed. FDN 201 and Ed. ADM 261
2. Ed. PSY 276
3. English 240
4. Major
5. Approved Arts and Science option
6. Physical Education.

Courses 1, 2, 3, and 6 are compulsory, as follows:

	<i>Hours per week</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. Ed. ADM 261—Educational Administration and Ed. FDN 201—Introduction to Education	3 (half year)	0
2. Ed. PSY 276—Introduction to Educational Psychology	3	0
3. English 240—Survey of English Literature	3	0
6. Physical Education 218 (M) — Recreational Activities or Physical Education 228 (W) — Recreational Activities	0	2

COURSE 4 — MAJOR

The major fields of study must be chosen from these subjects listed below:

	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. Art 230—Principles of Design and Composition	1	4
2. English 288—Introduction to the English Language	3	0
3. Early Childhood Education: Art 230—Principles of Design and Composition or Music 100—Introduction to Concert Music or Music 200—History of Music and Choral Technique (Prerequisite: (a) Western Board of Music Grade III Theory or equivalent; and (b) Western Board of Music Grade V Practical or equivalent)	1 3 2	4 0 3

DETAILS OF COURSES

4.	French 200—First Year University French (Prerequisite: Grade XII French 30)	3	1
5.	German 200—First Year University German (Prerequisite: Grade XII German 30)	3	1
6.	Latin 200—Latin Authors and Prose Composition (Prerequisite: Grade XII Latin 30)	3	0
7.	Mathematics 211—Elementary Mathematics (Prerequisite: Grade XII Mathematics 30 and 31) or Mathematics 211 and Mathematics 111 — Trigonometry (Prerequisites: 70% standing in Grade XII Mathematics 30, and 70% standing in the required courses of Grade XII, or special permission of the Dean of the Faculty of Arts and Science)	5 2 (Fall term only)	2 0
8.	Music 200—History of Music and Choral Technique (Prerequisite: (a) Western Board of Music Grade III Theory or equivalent; and (b) Western Board of Music Grade V Practical or equivalent)	2	3
9.	Physical Education 200 — Physical Education in the Elementary School	1	2
10.	Biological Science: Botany 271 — Introductory Botany or Zoology 220—Elementary Zoology	3 3	3 3
11.	Physical Science: Chemistry 230—Inorganic Chemistry (Prerequisite: Grade XII Chemistry 30) For students intending to major in physical sciences in the secondary route, the choice should be Chemistry 230. or Physics 200—General Physics (Prerequisite: Grade XII Physics 30)	3 1S 3	3 3
12.	Social Studies: Anthropology 202—Elementary Anthropology or Economics 200—Principles of Economics or History 200—European History or History 210—Canada and the United States, 1492-1939 or Political Science 200—Elements of Political Science or Sociology 202—Introductory Sociology	3 3 3 3 3 3 3	0 0 0 0 0 0 0

COURSE 5—ARTS AND SCIENCE OPTION

This course may be chosen from either of the two alternatives below:

Alternative 1. An introductory course in a field of study *other than* the major field of study already chosen; one for which prerequisites are held, and one for which no timetable conflicts occur.

Select from Section, "Details of Courses."
OR

- Alternative 2. A second course in the major field of study; one for which prerequisites are held and no timetable conflicts occur. Students intending to major in the secondary route should note that at least three courses in the major field of study must be completed by the end of the second year.

Select from the following list:

		<i>Hours</i>	
		<i>Lecture</i>	<i>Laboratory</i>
1.	Art:		
	Art 200—Introduction to the History of Art	3	0
	or		
	Art 240—Fundamentals of Drawing	3	3
2.	English:		
	English 288	3	0
3.	Early Childhood Education: a course (Art or Music not previously chosen as item 3 in the Major.		
4.	French:		
	None: French 200 is a prerequisite for all senior French courses		
5.	German:		
	None: German 200 is a prerequisite for all senior German courses		
6.	Latin:		
	None: Latin 200 is a prerequisite for all senior Latin courses		
7.	Mathematics		
	Mathematics 281 — Algebra	3	0
	(Prerequisite: Grade XII Mathematics 30)		
8.	Music:		
	Music 250—Elementary Harmony and Counterpoint	2	3
9.	Physical Education:		
	Physical Education 327 and 329		
10.	Science:		
	For students intending to major in the secondary route, the choice should be Mathematics 211 as prerequisite to Physics 240 in the second year. For students intending to major in the elementary route the choice should be a physical science (either Chemistry 230 or Physics 200) if a biological science was chosen as No. 4, or a biological science (Botany 271 or Zoology 220) if a physical science was chosen as No. 4.		
11.	Social Studies:		
	A course not previously chosen as item 4 in the Major, except a second course in History.		

FACULTY OF COMMERCE

General Regulations

The University of Alberta, Calgary, admits the first two years of the Bachelor of Commerce program leading to the University Bachelor of Commerce.

During the third and fourth years of the program the student may choose a General Course or may major in Economics, Accounting, Personnel, Finance, Marketing or Marketing.

The curriculum for the first two years of the program is based on the following:

PART VI

1. Education for the business management of a life time.

2. Knowledge and skills for the business management of a life time.

Other Faculties

Business and the environment have changed enormously in the last twenty years and will change at an even faster rate in the next twenty. No school of business can possibly teach the solution of problems which will arise twenty years from now. A school should provide the best possible tools for effective thinking, learning through actual experience. The school should not ask, "What should the businessman know?" but rather "What all things he should know, what are best taught in the few years of available professional education?" First, more or should teach the broad underlying fields of knowledge which are basic to business, and should teach the basic of business from the comprehensive analytical framework, rather than from a narrow or current business practice. Second, teach a broad, critical philosophy and moral structure which will be able to apply when the student enters the business world. Third, will emphasize the application of the basic knowledge to the study of business in the business world. In the first three years of the program, the student will take courses in the basic disciplines. Later he will be taught how the basic knowledge may be applied most effectively to the solution of the various problems of business in a general program of a specialization of the third year. They be selected from the fields of accounting, finance, finance, marketing, personnel administration or statistics.

The Faculty of Commerce is a school of business management, producing many well-trained men and women who are trained and educated in the business world.

FACULTY OF COMMERCE

General Regulations

Introduction

The University of Alberta, Calgary, offers the first two years of the four-year program leading to the Degree of Bachelor of Commerce.

During the third and fourth years of the program the student may pursue a General Course or may major in Economics, Accounting, Personnel, Finance, Production or Marketing.

The curriculum of the Faculty of Commerce is based on two beliefs:

1. Education for business management is a life long process;
2. Universities can make their greatest contribution to this process by teaching the disciplines and fields of knowledge which underlie the practice of business. Details of current business practice, though important, can best be taught by business itself and learned through experience.

Business and its environment have changed enormously in the last twenty years and will change at an even faster pace in the next twenty. No school of business can possibly teach the solution of problems which will arise twenty years from now. A school should provide the best possible basis for effective life-long learning through actual experience. The school should not ask, "What should the businessman know?" but rather "Of all things he should know, what are best taught in the few years of academic, professional education?" Universities should teach the broad underlying fields of knowledge which are basic to business, and should treat the fields of business practice in comprehensive analytical framework, rather than teach recent or current business practice. Alfred North Whitehead, British philosopher and noted educator, stated this theory in simply words when he said that a properly educated man "... will remember by an unconscious common sense how to apply principles to immediate circumstances." In the first three years of the program, the student will take courses in the basic disciplines. Later he will be taught how this basic knowledge may be applied most effectively to the solution of the various problems of business in a general program or in a specialization of his choice which may be selected from the fields of accounting, economics, finance, marketing, personnel administration or production.

The Faculty of Commerce is proud to number among its graduates many individuals now holding positions of trust and leadership in the Canadian business world.

COMMERCE—GENERAL

Practical Experience

Students must satisfy the Faculty that they have had some practical business experience before they will be allowed to graduate. This experience may have been obtained before entering university. If not, arrangements should be made to obtain it during the summer months. The equivalent of two full summers of practical experience (nine months) will be required. In February of each year an opportunity will be given to students to present themselves before a Committee under the direction of the Dean to outline the work which they have done or intend to do to meet the practical experience qualifications. This should be done before the end of the Second Year.

Student Activities

The Faculty of Commerce makes every effort to give the students opportunities to meet with Business Leaders and discuss some of the practical problems of Business Management. In particular, an annual Student Business Day is held during the year. At this time leaders in the business community are invited to accept the chairmanship of student discussion groups where current topics of interest receive close scrutiny.

Toward the end of the final term before graduation a special banquet is tendered the graduating class and is held under the sponsorship of a leading business association.

Commerce Honor Society

This Society organizes and sponsors meetings of the Commerce Forum. The Commerce Forum invites outstanding people from other Faculties both within the University and outside the University and from business to discuss matters of general educational interest. Membership in the Commerce Honor Society is restricted to students in the final three years of the program whose personality, ability and academic record are meritorious.

Applications for membership in the Commerce Honor Society must be submitted on the approved forms to the Dean's secretary by October 10.

Advisory Committee to the Faculty of Commerce

To keep staff and students informed about latest trends in business and industry a group of active leaders in the administration and direction of business enterprises have been invited periodically to meet with the Faculty. These members are appointed by the Board of Governors upon nomination by the President of the University.

Mr. Ian Angus, Vice-President and General Manager,
Canadian Sugar Factories Ltd.

Mr. Charles I. Archibald, Manager, Main Branch, Bank
of Nova Scotia.

Mr. A. G. Bailey, Vice-President and General Manager,
Bailey-Selburn Oil and Gas Ltd.

Mr. A. T. Baker, General Manager, Alberta Wheat Pool.

Mr. S. Belzberg, President, Belzberg Enterprises Ltd.

Mr. C. W. Clement, Q.C., Chairman Education Committee,
Law Society of Alberta.

Mr. H. K. Collinge, Vice-President and Resident Manager,
North Western Pulp and Power Ltd.

- Mr. G. R. Graham, Vice-President, Canadian National Railways, Mountain Region.
- Mr. O. A. Greiner, Vice-President and Plant Manager, Canadian Chemicals Ltd.
- Mr. D. S. Harvie, General Manager, Western Leaseholds Ltd.
- Mr. G. R. Heffernan, Managing Director, Premier Steel Mills Ltd.
- Hon. E. W. Hinman, Provincial Treasurer, Province of Alberta.
- Mr. J. Howard Kelly, President, Burns and Co. Ltd.
- Mr. H. H. Millar, President, Western Construction and Lumber Co. Ltd.
- Mr. Carl O. Nickle, Editor, Nickle's Daily Oil Bulletin.
- Mr. T. Sissons, Production Manager, Medicine Hat Brick and Tile Company Ltd.
- Mr. M. E. Stewart, General Manager, Northwestern Utilities Ltd.
- Mr. B. F. L. Symes, Resident Partner, Peat, Marwick, Mitchell.
- Mr. I. Telmer, Manager, Hudson's Bay Company, Edmonton.
- Mr. J. M. Tweddle, Finance Commissioner, City of Edmonton.
- Mr. M. Wolfe, General Manager, Edmonton Motors Ltd.
- Mr. W. S. Ziegler, President, Inland Cement Co.

Programs of Study

The curriculum in the Faculty of Commerce is based upon a four year program. During the third and fourth years of the program the student may pursue a general course or may major in Economics, Accounting, Personnel, Finance, Production or Marketing.

Availability

Courses in the first two years of the program are offered from time to time in the Summer Session and Evening Credit Program. The final two years of the program may be taken only in the regular Winter Session.

Admission Requirements

Students from Alberta high schools seeking admission to the Faculty of Commerce will be required to present:

- (a) a High School Graduation Diploma with
- (b) "B" or higher standing in the following Grade XII examination subjects:
 1. English 30.
 2. Social Studies 30,
 3. Mathematics 30,
 4. 5 and 6. Three of:
 - Chemistry 30,
 - Physics 30,
 - Biology 32,
 - French 30, or German 30 or Latin 30; and
- (c) an average in these six courses of at least 60%.

Candidates from outside Alberta will be required to meet equivalent standards.

Students who completed Grade XII in 1954 or earlier will be given full consideration for admission.

English 30	C
Social Studies 30	C
Mathematics 30	C
Chemistry 30	O
Physics 30	O
Biology 32	O
French 30 German 30 Latin 30	O

3 compulsory: 3 options

Promotion and Graduation

Promotion of the student from the first to the second year is contingent on the satisfactory completion in one year of a first-year program of normal weight. The regulation applies also to students transferring from other universities.

In the four-year program eight courses must be passed with at least second-class standing, of which at least four must be courses taken in the third and fourth years.

First Class Standing

First-class standing in a given year is awarded to any student who secures an average mark of not less than 80% in the work of that year.

Degree with Distinction

The notation "With Distinction" will be inscribed on the permanent record and graduation parchment of a candidate for the B.Comm. Degree if the candidate has obtained a weighted average of 80% or higher over the last two years of his program.

PROGRAMS

First Year:

Accounting 200
 Business 202
 Economics 200
 English 240
 An approved course in Mathematics
 or
 an Arts and Science option
 Physical Education

Second Year:

Business 310
 Psychology 202
 Statistics 354
 *Business 351
 *Business 353
 Philosophy 241
 or an
 Arts and Science option
 *Business 320 may be offered instead of Business 351 and 353.

Third Year:

Finance 302
 Marketing 302
 Personnel 302
 Production 302
 Business 320 (or Business 351 and 353)
 one of the following, according to the student's area of interest:

Accounting:	Accounting 300
Economics:	Economics 300
Finance:	Economics 340
Marketing:	Marketing 310
Personnel:	Economics 330
Production:	Production 310
General:	Any of the above

Fourth Year:

Courses offered are as follows:
 Business 400
 Arts and Science option
 Three Commerce or Economics options, of which at least two will be from the specialty.

FACULTY OF ENGINEERING

General Regulations

Admission Requirements

1. The standard required for admission to the first year of Engineering is —
 - (a) an Alberta High School Diploma with
 - (b) a "B" or higher standing in each of the following seven courses.
 - (1) Chemistry 30 — (Students who have passed Chemistry 30 without approved laboratory will be required to satisfy the Department of Chemistry as to their proficiency in laboratory work.)
 - (2) English 30
 - (3) French 30, or German 30, or Latin 30
 - (4) Mathematics 30
 - (5) Mathematics 31—(Credit in Mathematics 31 will not be included in the average if it was obtained prior to the Departmental examination 1962.)
 - (6) Physics 30
 - (7) Social Studies 30, and
 - (c) an average in these courses of at least 60%.
2. Students who have completed their High School work in Alberta in 1959 or earlier and who have met the admission requirements in effect at the time of their High School graduation will be given special consideration.
3. To provide only for students who have followed the curriculum in the schools of Alberta to the High School Graduation Diploma without being able to obtain all the required courses because such courses have not been available in their local schools, the Faculty of Arts and Science offers courses at the Grade XII level corresponding to French 30, Latin 30, German 30, Chemistry 30, Mathematics 31 and Physics 30. A maximum of two of these courses (except Mathematics 31) may be taken during the Summer Session by students holding an Alberta High School Diploma and having a B or higher standing in their courses which must include English 30, Social Studies 30 and Mathematics 30. A student who is deficient only in one or two of French 30, Latin 30, German 30, Chemistry 30, Mathematics 31 or Physics 30 may qualify himself for admission to the Faculty of Engineering through attendance at a summer session.

ENGINEERING—GENERAL

4. Students who have completed their High School work outside Alberta will be judged on the Alberta matriculation standard with their High School credits being evaluated by the Registrar and the Dean.
5. Students who completed the bulk of their High School work two or more years prior to the time of application are required to consult the Dean and the Students Counselling Service by July 31st.

The Faculty of Engineering administers regular four-year programs leading to the B.Sc. Degree in Chemical, Civil, Electrical, Mechanical, Metallurgical, Mining, and Petroleum Engineering. Special patterns are available in the third and fourth years of some of these programs. In addition, for students obtaining a sufficiently high standing in the work of the first two years programs are available leading to the B.Sc. Degree in Engineering Physics.

Instruction in the first two years of Engineering is offered both at the Calgary and the Edmonton campus of the University. *Instruction in the third and fourth years of Engineering is available only at the Edmonton campus.*

Graduate work leading to the M.Sc., and in some cases the Ph.D., degree is offered through the various Engineering Departments under the administration of the Faculty of Graduate Studies.

Promotion

1. A student who has obtained credit in all but one of the courses prescribed for him in any year may be permitted registration in the subsequent year of the program but, if so, will be required to re-register and repeat the failed course.
2. A student who has not obtained credit in all or all but one of the courses prescribed for him in any year is considered to have failed his year and will be denied registration in the subsequent year of the program.
3. A student who has failed two or more of the courses prescribed for him in any year may under special circumstances be permitted to repeat the failed year. Credits may be given in one or more courses previously taken and passed with a grade of 65 percent or higher. In such cases the student may be required to register in additional courses not more than one of which may be a course prescribed in a subsequent year of his program.
4. A student permitted to repeat a failed year who fails to produce a satisfactory record in the first-term examinations in the repeated year, will be required to withdraw from the Faculty and will be denied further registration in Engineering.
5. A student who has obtained credit in all of the courses prescribed for him in the second year of a program may be permitted registration in the third year of a different program but, if so, will be required to register in any course prescribed for the second year of the new program in which he does not have credit.

ENGINEERING—PROGRAMS

6. A student will be denied further registration in Engineering if after three academic years he has not qualified for registration in the third year of his program.

*Weighting
of Grades*

In the computation of student averages for scholarship and other purposes the grades obtained in individual courses are weighted in accordance with weighting factors representing the sum of

- (a) The number of hours per week of lectures for each term, plus
- (b) from one-third to one-half the number of hours per week of laboratory for each term.

FIRST YEAR

Number	Subject	Hours per week			
		First Term Lect.	Lab.	Second Term Lect.	Lab.
1. Chem. 232 — Modern Chemistry	-----	3	3	3	3
2. C.E. 153 — Surveying	-----	0	0	1	0
			Plus 3½ weeks*		
3. D.G. 151 — Drafting and Graphics	-----	0	3	2	4
4. E.M. 150 — Engineering Mechanics (Statics)	-----	3	3/2	0	0
5. E.M. 151 — Engineering Mechanics (Particle Dynamics)	-----	0	0	3	0
6. Eng. P. 159 — Orientation to Engineering Profession	-----	1	0	0	0
7. Eng. 250 — English	-----	2	0	2	0
8. Math. 202 — Elementary Mathematics	----	5	0	5	0
9. Physics 230 — Mechanics, Electricity and Magnetism	-----	3	3/2	2	3/2
10. Phys. Ed. — Physical Education	-----	0	2	0	2
Total Hours		7	11	18	10½

*Survey School, 3½ weeks duration after the end of final examinations in preceding courses.

ENGINEERING—GENERAL

4. Students who have completed their High School work outside Alberta will be judged on the Alberta matriculation standard with their High School credits being evaluated by the Registrar and the Dean.
5. Students who completed the bulk of their High School work two or more years prior to the time of application are required to consult the Dean and the Students Counselling Service by July 31st.

The Faculty of Engineering administers regular four-year programs leading to the B.Sc. Degree in Chemical, Civil, Electrical, Mechanical, Metallurgical, Mining, and Petroleum Engineering. Special patterns are available in the third and fourth years of some of these programs. In addition, for students obtaining a sufficiently high standing in the work of the first two years programs are available leading to the B.Sc. Degree in Engineering Physics.

Instruction in the first two years of Engineering is offered both at the Calgary and the Edmonton campus of the University. *Instruction in the third and fourth years of Engineering is available only at the Edmonton campus.*

Graduate work leading to the M.Sc., and in some cases the Ph.D., degree is offered through the various Engineering Departments under the administration of the Faculty of Graduate Studies.

Promotion

1. A student who has obtained credit in all but one of the courses prescribed for him in any year may be permitted registration in the subsequent year of the program but, if so, will be required to re-register and repeat the failed course.
2. A student who has not obtained credit in all or all but one of the courses prescribed for him in any year is considered to have failed his year and will be denied registration in the subsequent year of the program.
3. A student who has failed two or more of the courses prescribed for him in any year may under special circumstances be permitted to repeat the failed year. Credits may be given in one or more courses previously taken and passed with a grade of 65 percent or higher. In such cases the student may be required to register in additional courses not more than one of which may be a course prescribed in a subsequent year of his program.
4. A student permitted to repeat a failed year who fails to produce a satisfactory record in the first-term examinations in the repeated year, will be required to withdraw from the Faculty and will be denied further registration in Engineering.
5. A student who has obtained credit in all of the courses prescribed for him in the second year of a program may be permitted registration in the third year of a different program but, if so, will be required to register in any course prescribed for the second year of the new program in which he does not have credit.

ENGINEERING—PROGRAMS

6. A student will be denied further registration in Engineering if after three academic years he has not qualified for registration in the third year of his program.

Weighting of Grades

In the computation of student averages for scholarship and other purposes the grades obtained in individual courses are weighted in accordance with weighting factors representing the sum of

- (a) The number of hours per week of lectures for each term, plus
- (b) from one-third to one-half the number of hours per week of laboratory for each term.

FIRST YEAR

Number	Subject	Hours per week			
		First Term Lect.	Lab.	Second Term Lect.	Lab.
1.	Chem. 232 — Modern Chemistry	3	3	3	3
2.	C.E. 153 — Surveying	0	0	1	0
			Plus 3½ weeks*		
3.	D.G. 151 — Drafting and Graphics	0	3	2	4
4.	E.M. 150 — Engineering Mechanics (Statics)	3	3/2	0	0
5.	E.M. 151 — Engineering Mechanics (Particle Dynamics)	0	0	3	0
6.	Eng. P. 159 — Orientation to Engineering Profession	1	0	0	0
7.	Eng. 250 — English	2	0	2	0
8.	Math. 202 — Elementary Mathematics	5	0	5	0
9.	Physics 230 — Mechanics, Electricity and Magnetism	3	3/2	2	3/2
10.	Phys. Ed. — Physical Education	0	2	0	2
Total Hours		7	11	18	10½

*Survey School, 3½ weeks duration after the end of final examinations in preceeding courses.

ENGINEERING—PROGRAMS

SECOND YEAR

Number	Subject	Hours per week			
		First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Math. 303 — Calculus		3	2	3	2
Phys. 340 — Magnetism, Electricity and Light ..		3	3/2	3	3/2
Chem. 374 — Physical Chemistry		3	1	3	1
E.M. 250 — Engineering Mechanics		3	0	3	0
C.E. 262 — Strength of Materials		2	4/2	2	4/2
E.E. 252 — Electrical Circuits		2	3/2	2	3/2
Met.E. 252 — Engineering Materials I		2	0	0	0
Ch.E. 252 — Engineering Materials II		0	0	2	0
Geol. 230 — Geology		2	0	2	0
Total Hours		20	8	20	8

SCHOOL OF PHYSICAL EDUCATION

General Regulations

Introduction

The School of Physical Education was organized in 1954. The three-year degree course in Physical Education has been offered since 1950. The program originally led to the degree of Bachelor of Education in Physical Education, which has been superseded by the degree of Bachelor of Physical Education. Students enrolling in 1963-64 will be able to complete the entire program at UAC.

The School also offers a four-year program leading to the degree of Bachelor of Arts in Recreation Leadership. Only the first year of this program is offered at UAC.

Opportunities in Physical Education

Graduates with a degree in physical education are being employed in both the fields of recreation and physical education. The demand for qualified people in these fields continues to increase each year, far exceeding the supply.

Service Courses

In addition to the three-year course leading to the degree of Bachelor of Physical Education, the School provides instruction in teaching methods in both health and physical education for students in the faculty of Education, conducts regular classes for first-year students in all faculties, organizes and supervises an intramural program and acts in an advisory capacity for the intercollegiate athletic program.

Intramural Program

The School of Physical Education, with the co-operation of the University Athletic Board, organizes and administers a comprehensive program of intramural sports. A primary purpose of the program is to encourage sportsmanship and friendly relations among the students of the University through athletic competition. Individual and group competitive sports for men and women include golf, tennis, cross-country, basketball, hockey, volleyball, touch football, table tennis, curling, swimming, skiing, badminton and bowling.

Intercollegiate Athletics

Included in the activities for men are cross-country, golf, tennis, badminton, volleyball, basketball, hockey, skiing and curling. Women compete in basketball, volleyball, badminton, skiing, bowling and curling.

PHYSICAL EDUCATION—PROGRAMS

Admission A high school diploma with "B" or higher standing and at least a 60% average in the following Grade XII courses:

- (1) English 30,
- (2) Social Studies 30,
- (3) Chemistry 30,
- (4) Three of: French 30, German 30, Latin 30, Physics 30, Biology 32, Mathematics 30.

It is recommended that students planning to register in Physical Education elect to take Biology 32 as one of the three optional courses.

Bachelor of Physical Education

First Year

	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. Chemistry 250 — Organic Chemistry (Prerequisite: Grade XII Chemistry 30)	3	3
2. English 240 — Survey of English Literature	3	0
3. Psychology 202—Introduction to General Psychology	3	0
4. Zoology 220 — Elementary Zoology	3	3
5. Physical Education 243: Introduction to Physical Education	3	0
	(Fall term only)	
6. Physical Education 205: Activity Course	0	3
	(Fall term only)	
7. Physical Education 207: Activity Course	0	3
	(Fall term only)	
8. Physical Education 211: Activity Course	0	3
	(Winter term only)	
9. Physical Education 215: Activity Course	0	3
	(Winter term only)	

Bachelor of Arts in Recreation Leadership

First Year

	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. English 240 — Survey of English Literature	3	0
2. Psychology 202—Introduction to General Psychology	3	0
3. Sociology 202 — Introductory Sociology	3	0
4. One approved Division C course (see page 42).		
5. Physical Education 243 — Introduction to Physical Education	3	0
	(Fall term only)	
6. Physical Education 215—Activity Course	0	3
	(Winter term only)	

The first year only of this program may be taken at UAC.

FACULTY OF AGRICULTURE

General Regulations

A modified first year in Agriculture may be taken at the University of Alberta, Calgary, by registering in the program listed later in this calendar. A rather similar modified program is also offered at Lethbridge Junior College. The second, third and fourth years in Agriculture are offered at the University of Alberta in Edmonton only.

A special first year pre-veterinary program providing for the possibility of obtaining one year of advanced standing at The Ontario Veterinary College may be taken with the approval of the Dean, Faculty of Agriculture.

Introduction

The Faculty of Agriculture was established at the University of Alberta in 1915 and the first students to receive the degree of Bachelor of Science in Agriculture (B.S.A.) graduated in 1918. The present B.Sc. degree was first given in 1924.

The four-year course in Agriculture provides education in the science of agriculture. The Faculty has under its direct administration the departments of Agriculture: Economics and Farm Management, Agricultural Engineering, Animal Science, Dairy Science, Entomology, Genetics, Plant Science and Soil Science. Many of the courses which are fundamental to the science of agriculture are given in other departments of the University, since the underlying scientific principles are the same as in any other field. It is the function of the departments in this Faculty to apply these principles to the solution of agricultural problems and to seek, through research, new information.

Graduates of the Faculty are engaged in teaching, research, extension, and administrative work related to agricultural production, marketing, and processing; in the manufacture and distribution of such essentials as feeds, fertilizers, and machinery; in the handling of agricultural products; and in farming. During the past ten years an increasing number of agricultural industries have offered attractive opportunities for graduates of this Faculty.

The departments in the Faculty also offer advanced degrees, and carry on extensive programs of research. The departments of Animal Science, Plant Science, and Soil Science operate experimental farms used in the teaching and research programs of these departments. All departments have space and facilities for laboratory research.

Student Guidance

The Dean of the Faculty of Agriculture will be pleased to confer with students in Edmonton at any time.

Students of the second, third and fourth years will be assisted and guided in connection with their registrations by members of the Agricultural Registration Committee.

AGRICULTURE—GENERAL

Admission

Students from the high schools of Alberta seeking admission to the Faculty of Agriculture will be required to present

Either —

I.—The High School Diploma with "B" or higher standing in the following courses and an average in them of at least 60%:

1. English 30
2. Social Studies 30.
3. Mathematics 30.
4. Chemistry 30.
5. and 6. Two of Physics 30.
Biology 32.
French 30 or German 30 or Latin 30

Students should have Physics 30 where possible.

OR —

II.—A diploma from a Provincial School of Agriculture, together with "B" or higher standing in Literature 20; Language 20; Social Studies 20; one of French 20, German 20, or Latin 20; Mathematics 30; Chemistry 30; Physics 30 or Biology 32; with an average in three Grade XII courses of at least 60%.

Students who completed Grade XII in 1954 or earlier will be given full consideration for admission. Candidates from outside Alberta will be required to meet equivalent standards.

Promotion

1. Inasmuch as a rigid year system is not followed in the Faculty of Agriculture, promotion from year to year is made by Faculty Council upon the recommendation of (a) the First-Year Committee in the case of first-year students, and (b) the Agricultural Revisions Committee in the case of students of the succeeding years.
2. In general, promotion to the third year in Agriculture will be granted only to students who have passed all first and second year subjects required; exception may be granted when a student has passed all first and second year subjects but one and has an average standing for the two years of at least 60%.
3. Students transferring from other universities normally will be required to take, as a minimum, the equivalent of a regular senior year in attendance at the University of Alberta before the degree of B.Sc. in Agriculture will be granted.

The attention of students in Agriculture is directed to the fact that admission to postgraduate studies leading to the M.Sc. degree is based primarily upon the quality of the undergraduate work.

BACHELOR OF SCIENCE IN AGRICULTURE

The first year of the program in Agriculture consists of introductory courses which are required of all students. There are also some courses required of all students during the second year but students may select two or three courses of their own choice. Thus students have the opportunity to commence specialization in one of several branches of professional agriculture or they may continue on a general program of courses in the second year. During the third and fourth years students have great freedom in the selection of the courses which they take.

The requirements for the modified first year program in Agriculture offered at Calgary follows. The requirements for the third and fourth years are contained in the Faculty of Agriculture Calendar which may be obtained from The Dean, Faculty of Agriculture, University of Alberta, Edmonton, Alberta.

	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. Botany 271 (formerly 201)—Introductory Botany	3	3
or		
Economics 200 — Principles of Economics	3	0
2. Chemistry 230—Inorganic Chemistry	3	3
(Prerequisite: Grade XII Chemistry 30)	(Plus 1 hour seminar)	
3. Economics 200 — Principles of Economics	3	0
or		
Mathematics 211 (formerly 201)—Elementary Mathematics	5	0
(Prerequisites: Grade XII Mathematics 30 and Mathematics 31)		
or		
Mathematics 211	5	0
and		
Mathematics 111 — Trigonometry	2	0
(Prerequisites: Grade XII Mathematics 30, and special permission)	(Fall term only)	
4. English 240—Survey of English Literature	3	0
5. Zoology 220 — Elementary Zoology	3	3
or		
Economics 200—Principles of Economics	3	0
6. Physical Education 218 (M)—Recreational Activities	0	2
or		
Physical Education 228 (W)—Recreational Activities	0	2

Students desiring to major in Agricultural Economics will be permitted to substitute Economics 200 for either Botany or Zoology in the foregoing program.

Agriculture 201, Chemistry 350, Mathematics 220, Genetics 351 or Microbiology 360 or Genetics 360 and Bacteriology 201 are required second year courses for students taking the first year at Calgary or Lethbridge.

The second, third, and fourth years in Agriculture are offered at the University of Alberta, Edmonton, only.

AGRICULTURE—PROGRAMS

Special Program for Advanced Standing
in Veterinary Medicine at Ontario
Veterinary College

Facilities at the Ontario Veterinary College limit the number of students that the College can accept. For that reason the Ontario Veterinary College cannot give firm assurance to students that they will be admitted to the College.

Students desiring to study veterinary medicine at The Ontario Veterinary College may qualify for advanced standing in the first year of the required program at O.V.C. by successful completion of the following program with an average of at least 65%. However, students attaining that standing are not assured of admission to the second year of the O.V.C. program; their applications will be accepted in competition with those of similar students from other provinces and the limited facilities at O.V.C. will be available to those students with the highest standing.

Because this program is not a regular one for the Faculty of Agriculture, students desiring to obtain first year credit at The Ontario Veterinary College by the above route will be registered as Special Students in the Faculty of Agriculture, University of Alberta. Approval of the Dean is required.

Students successfully completing the above Special Program for first year veterinary medicine with an average of at least 60% will be able to transfer to the B.Sc. in Agriculture program at the University of Alberta with the opportunity to earn the degree by the successful completion of three additional years of work.

Admission Students from the High Schools of Alberta seeking admission to the Special Program for Advanced Standing in Veterinary Medicine will be required to present:

The High School diploma with "B" or higher standing in the following courses, and an average in them of at least 60%.

- 1. Chemistry 30.
- 2. English 30
- 3. French 30 or
German 30 or
Latin 30.
- 4. Mathematics 30.
- 5. Physics 30.
- 6. Social Studies 30.

Hours
Lecture Laboratory

1. Botany 271 (formerly 201)—Introductory Botany	3	3
2. Chemistry 250—Organic Chemistry (Prerequisite: Grade XII Chemistry 30)	3	3
3. English 240—Survey of English Literature	3	0
4. Physics 200 — General Physics (Prerequisite: Grade XII Physics 30)	3	3
5. Zoology 220 — Elementary Zoology	3	3
6. Physical Education 218 (M)—Recreational Activities or Physical Education 228 (W)—Recreational Activities	0	2

Prerequisite Program

SCHOOL OF ARCHITECTURE

University of British Columbia

GENERAL B.A. OR B.Sc. DEGREE

The General B.A. or B.Sc. Degree is a three-year program. It is possible to arrange this program at U.A.C. so that it becomes acceptable for admission to the School of Architecture of the University of British Columbia. It must be understood, however, that no student can be guaranteed admission to this School.

The size of the School of Architecture at U.B.C. limits the enrollment to approximately one hundred students. Since they have an enrollment in their own University in the order of 50 students who desire to enter the School, the competition is considerable for the other places which might be permitted in a year. Alberta students, therefore, are advised that there is this competition and approximately one-third of those aspiring to enter the School of Architecture will probably have to be turned down.

- Admission* (1) Seven subjects of Alberta Grade XII (Senior Matriculation) including Mathematics 31 are required. Mathematics 111 and 211 (formerly 201) may sometimes be substituted for Mathematics 31 by special permission.
- (2) Six of these subjects are compulsory.
- (3) These seven subjects must include either Chemistry 30 or Biology 30 or 32.
- (4) A minimum average of 60% in these subjects (that is, at least 360 marks in six subjects—if Mathematics 111 is approved as a substitute for Mathematics 31—or at least 420 marks in seven subjects) is required.

English 30	
Social Studies 30	
Mathematics 30	
Mathematics 31	
Chemistry 30	
Physics 30	
Biology 32	
French 30 German 30 Latin 30	
C	C

First-Year Program

	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. Art 230—Art History and Appreciation	3	0
2. English 240—Survey of English Literature	3	0
3. French 200—First-Year University French (Prerequisite: Grade XII French 30)	3	1

or

ARCHITECTURE

4.	German 200—First-Year University German (Prerequisite: Grade XII German 30)	3	1
	or		
	Latin 200—Latin Authors and Prose Composition (Prerequisite: Grade XII Latin 30)	3	0
	Mathematics 211 (formerly 201)—Elementary Mathematics (Prerequisites: Grade XII Mathematics 30 and Mathematics 31)	5	0
	or		
	Mathematics 211	5	0
	and		
	Mathematics 111 — Trigonometry (Prerequisites: Grade XII Mathematics 30, and special permission)	2	0 (Fall term only)
5.	Physics 240—Physical Properties of Matter, Heat and Sound (Corequisite: Mathematics 211; Mathe- matics 211 and 111 may be accepted by special permission)	3	3
6.	Physical Education 218 (M)—Recreational Activities	0	2
	or		
	Physical Education 228 (W)—Recreational Activities	0	2

ARCHITECTURE

Second Year:

Art 200 — Introduction to the History of Art.

Art 240 — Fundamentals of Drawing.

Mathematics 315 — Calculus and Analytical Geometry.

Physics 340 — Light, Electricity, and Magnetism.

One senior course in English or Philosophy.

Third Year:

To be arranged.

Prerequisite Program

FACULTY OF DENTISTRY

Applicants for admission to the Faculty of Dentistry may complete the required year of pre-professional studies in Calgary in the Faculty of Arts and Science. The four professional years of dentistry are not offered in Calgary.

Admission Arts and Science

I. Students from the High Schools of Alberta seeking admission into the Faculty of Arts and Science for Dentistry will be required to present:

- (a) A High School diploma with
- (b) "B" or higher standing in
 1. English 30.
 2. Social Studies 30.
 3. Mathematics 30.
 4. Chemistry 30.
 5. Physics 30.
 6. French 30 or German 30 or Latin 30;

(c) an average in these six courses of at least 60%. Candidates from outside Alberta will be required to meet equivalent standards.

Students who completed Grade XII in 1954 or earlier will be given full consideration for admission. They are advised to provide a complete transcript of their high school records.

II. The above, plus at least one year in the Faculty of Arts and Science, constitutes matriculation into *the first year of Dentistry*, leading to the degree of Doctor of Dental Surgery (D.D.S.).

First Year Arts and Science

		<i>Hours</i>	
		<i>Lecture</i>	<i>Laboratory</i>
1. Chemistry 230 — Inorganic Chemistry (Prerequisite: Grade XII Chemistry 30)		3 (plus 1 hour seminar)	3
2. Chemistry 250—Organic Chemistry (Prerequisite: Grade XII Chemistry 30)		3	3
3. Zoology 220—Elementary Zoology		3	3
4. One first year Division A course (see Calendar page 40) English recommended.			
5. One first year Division B course (see Calendar page 41) Psychology 202 recommended.			
6. Physical Education 218 (M)—Recreational Activities or Physical Education 228 (W)—Recreational Activities	0		2
	0		2

DENTISTRY—ADMISSION

Admission
Dentistry

All students wishing to enter the first professional year of Dentistry are required to make application on or before May 15th. Residents outside Canada must make application on or before April 15.

Application should be made to Dean, Faculty of Dentistry, University of Alberta, Edmonton. Forms may be obtained from the Registrar, UAC.

In general, consideration for admission to the limit of available accommodation will be given to those students with an average of at least 65% in all courses taken after senior matriculation.

It must be distinctly understood that no student can be guaranteed admission to Dentistry on the basis of academic standing alone. Before final acceptance any applicant may be required to satisfy representatives of the faculty at a personal interview. The possession of personal qualities necessary for successful practice will be stressed. Further, any student whose performance in the work of any professional year is unsatisfactory to the Faculty will not be permitted to continue in the study of Dentistry.

SCHOOL OF HOUSEHOLD ECONOMICS

General Regulations

Introduction

Degree courses in Household Economics have been offered at the University of Alberta in Edmonton since 1918, when a department of Household Economics was established. In 1928 the School of Household Economics was organized under the Faculty of Arts and Science.

Students interested in obtaining the degree of Bachelor of Science in Household Economics may undertake a first year program at the University of Alberta, Calgary, and then transfer to the University of Alberta in Edmonton where the remaining subjects may be completed in two years.

Admission

- (a) A High School diploma with
- (b) "B" or higher standing in
 1. English 30.
 2. Social Studies 30.
 3. Mathematics 30.
 4. French 30 or German 30 or Latin 30.
 5. Chemistry 30, and
 6. Physics 30 (preferred) or Biology 32.

(c) An average in these six courses of at least 60%.
Students of the first year are invited to consult the Director in Edmonton with respect to the choice of courses for the senior years so that their programs may form coherent groups of studies in harmony with their main intellectual interests.

Promotion

1. To be granted the degree of Bachelor of Science in Household Economics a candidate must obtain a passing mark or better in fifteen courses and obtain an average of 60% in all courses credited towards the degree after the first year.
2. A student will not be allowed to write more than five supplemental examinations for the purpose of obtaining passing marks or of raising her average to the required 60%. A student will not be allowed to write more than two supplemental examinations in any year. A student who is repeating a year will be granted no supplemental privileges in the courses taken that year and must pass all courses with a 60% average to be allowed to continue.
3. The promotion of a student from the first to the second year is contingent on the satisfactory completion in one year of a first-year program of normal weight. This regulation applies also to students from other universities.

HOUSEHOLD ECONOMICS—PROGRAMS

First Year

University of Alberta, Calgary

	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. English 240—Survey of English Literature	3	0
or		
French 200—First Year University French	3	1
(Prerequisite: Grade XII French 30)		
or		
German 200—First Year University German	3	1
(Prerequisite: Grade XII German 30)		
or		
Latin 200—Latin Authors and Prose Composition	3	0
(Prerequisite: Grade XII Latin 30)		
2. Chemistry 230—Inorganic Chemistry	3	3
(Prerequisite: Grade XII Chemistry 30)	(Plus 1 hour seminar)	
3. Chemistry 250—Organic Chemistry	3	3
(Prerequisite: Grade XII Chemistry 30)		
4. Zoology 220 — Elementary Zoology	3	3
5. Economics 200—Principles of Economics	3	0
or		
Psychology 202—Introduction to General Psychology	3	0
(Students who intend enrolling in the Bachelor of Education program after having obtained the B.Sc. (H.Ec.) degree, should choose Psychology 202)		
or		
Sociology 202 — Introductory Sociology	3	0
6. Physical Education 228 (W)—Recreational Activities	0	2

Second and Third Year Programs

University of Alberta, Edmonton

Second Year:

Household Economics 202 (Clothing and Textiles)
 Physiology 360
 Biochemistry 300
 Household Economics 304 (Foods)
 Bacteriology 201, first term
 Household Economics 303 (Household Management) second term.

Third Year:

One course from Division A or B (see pages 40 and 41).
 Household Economics 456 (Economics of the Household)
 458 (Nutrition)
 459 (Methods of Presentation)
 Household Economics 451 (Institution Management)*
 454 (Experimental Cookery)*
 457 (Diet in Disease)*

*Students interested in clothing and design and not planning to become Dietitians may elect Household Economics 460 (Advanced Clothing) instead of Household Economics 451, 454 and 457.

Program Leading to Combined Course:

The Degrees of Bachelor of Arts (B.A.) and Bachelor of Laws (LL.B.)

Introduction

The course offered by the Faculty of Law in the University of Alberta, Edmonton, is designed to qualify a student for the practice of law in any jurisdiction in which the Common Law prevails. It is also designed to offer training for business and government administration.

Completion of the course in the Faculty of Law leads to the degree of Bachelor of Laws. The course requires a student's full time attendance for three academic years in Edmonton.

A graduate of the Faculty of Law who wishes to enter upon the practice of law must meet the requirements of the jurisdiction in which he desires to practice. The Province of Alberta requires the resident student graduate to article with a practicing member of the Bar and serve under him for one year; at the end of this period and upon fulfilling certain other conditions he is formally admitted by a judge of the Supreme Court to the practice of Law in this province.

Prospective law students are invited to consult the Dean of the Faculty of Law for advice as to the selection of options or for advice on any other problem.

Admission

Faculty of Law

The entrance requirement of the Faculty of Law in the University of Alberta, Edmonton, is:

- (a) either the degree of B.A. or an equivalent degree as accepted by the Committee on Admissions, or
- (b) the completion of two years of the combined B.A., LL.B., course as offered by the University of Alberta, Calgary.

Admission Arts and Science

The matriculation requirements for the combined course in the Faculty of Arts and Science are the same as for the B.A. program, namely:

- (a) a High School Diploma
- (b) "B" or higher standing in English 30, Social Studies 30, Mathematics 30, French 30 or German 30 or Latin 30 and two of Chemistry 30, Physics 30, Biology 32, a second Grade XII language; and
- (c) an average in these six courses of at least 60%.

COMBINED B.A., LL.B.—PROGRAMS

Restriction An applicant holding a B.A. or an equivalent degree is not automatically entitled to admission to the Faculty of Law. The whole record of each applicant is examined by a Committee of the Law Faculty Council which has power to decide whether he shall be admitted. A weak academic performance is a basis for refusal.

Promotion Students in the combined course are required to secure an average of 60% in each of the first two years. In addition they must obtain second class standing in at least four courses, two of which must be for the second year, before promotion to the third year of the combined course is permitted.

In the third year, his first year of Law, the student is primarily under the jurisdiction of the Faculty of Law but remains under the partial jurisdiction of the Faculty of Arts.

The degree of B.A. may be granted at the end of the fourth year, that is, the second year of law. The degree of LL.B. may be granted at the end of the fifth year, that is, the third year of Law.

Combined B.A. and LL.B.

First Year

	<i>Hours</i>	
	<i>Lecture</i>	<i>Laboratory</i>
1. Economics 200—Principles of Economics	3	0
or		
Political Science 200—Elements of Political Science	3	0
or		
Philosophy 241—Introduction to Western Philosophy	3	0
2. English 240—Survey of English Literature	3	0
3. French 200—First Year University French	3	1
(Prerequisite: Grade XII French 30)		
or		
German 200—First Year University German	3	1
(Prerequisite: Grade XII German 30)		
or		
Latin 200—Latin Authors and Prose Composition	3	0
(Prerequisite: Grade XII Latin 30)		
4. History 210—Canada and the United States, 1492-1939	3	0
5. One first year Division C course (see page 42).		
6. Physical Education 218 (M)—Recreational Activities	0	2
or		
Physical Education 228 (W)—Recreational Activities	0	2

COMBINED B.A., LL.B.—PROGRAMS

Second Year:

No student may enter the second year of the combined course unless he has successfully completed the first year with an average of not less than 60%. Five areas of concentration are allowed:

1. Two of Economics 310, 330, 340, 350 or 370.
History 350.
A senior English course or a senior language.
An approved B or C option.
2. Two of Political Science 310, 320, 330, 350.
History 350.
A senior English course or a senior language.
An approved B or C option.
3. History 350.
An approved senior History course.
An approved senior Economics or Political Science course.
A senior English course or a senior language.
An approved B or C option.
4. Two approved senior English courses.
History 350.
An approved senior Economics or Political Science course.
An approved B or C option or a senior language.
5. Two approved senior Philosophy courses.
History 350.
A senior English course or a senior language.
An approved B or C option.

Third Year:

History 450 and the prescription for first-year law.

Fourth Year:

The prescription for second-year Law. The degree of B.A. may be granted at the end of the fourth year.

Fifth Year:

The prescription for third-year Law.

Promotion from the second to the third year in the combined course is contingent upon an average of at least 60% in the second year and second class standing in at least four courses, two of which must be in the second year.

Prerequisite Program

FACULTY OF MEDICINE

Applicants for admission to the Faculty of Medicine may complete the required pre-professional studies for admission in Calgary in the Faculty of Arts and Science. No professional courses are offered in Calgary.

Students who expect to transfer to the Faculty of Medicine from the Faculty of Arts and Science should register in one of the patterns for the B.A. or B.Sc.

The requirements for admission to the Faculty of Medicine are at least two years of university training, with appropriate standing, and credit in Chemistry 230 and 350, Physics 100, 200 or 240, and Zoology 220.

These qualifications can be obtained by proper choice of courses in the first two years of the Botany, Chemistry, Entomology, Experimental Psychology, General Science, Mathematics, Physics, or Zoology patterns for the B.Sc. degree.

The same qualifications can be obtained in three years in any pattern for the B.A. degree.

Students are advised to choose a pattern offering these credits which they would be satisfied to complete if they were not admitted to the Faculty of Medicine.

Admission —Arts and Science

- I. Students from the high schools of Alberta seeking admission into the Faculty of Arts and Science for Medicine will be required to meet the admission standards of the B.Sc. or B.A. pattern in which they are interested. See Part IV of this Calendar.
- II. The above, plus at least two years in the Faculty of Arts and Science, constitutes matriculation into the first year of Medicine, leading to the degree of Doctor of Medicine (M.D.).

Admission —Medicine

All students who wish to enter the first year of Medicine are required to make application to the Registrar on or before April 3.

Owing to limited facilities for instruction it has been found necessary to restrict the number of candidates accepted for entrance into the first year of medicine. Consideration for admission under this quota will be given only to those students who have an over-all average of at least 65% in the work of all preceding university years.

While admission to Medicine is based largely on academic standing, the lack of essential personal qualities in an applicant may be deemed sufficient cause for refusal of admission. It should be further noted that any student whose work is unsatisfactory to the Faculty will not be permitted to continue in the study of medicine.

All successful applicants are required, upon acceptance of a position in first-year Medicine, to make a deposit of \$25.00 to the Bursar of the University. The deposit will be applied on first-year fees when the student registers in the ensuing term. Should a candidate withdraw after once accepting a position, this deposit will be forfeited.

SCHOOL OF NURSING

General Regulations

The School of Nursing offers the first year of the following basic and post-basic professional programs in Calgary:

Basic: a five-year program leading to the degree of Bachelor of Science in Nursing;

Post basic: a five-year program leading to the degree of Bachelor of Science in Nursing.

The first year of the program may be taken at the University of Alberta in Edmonton or in Calgary.

The second, third and fourth years are taken at the School of Nursing, University of Alberta Hospital, Edmonton.

The fifth year is taken at the University of Alberta, Edmonton.

The program of study is planned to utilize the scientific and liberal arts courses of the University as a background on which to build professional competence.

The basic program qualifies the student for first-level positions in hospital and public health fields.

For information regarding courses in the upper years of the program, refer to the calendar of the School of Nursing, Edmonton.

Admission I. Basic Program Leading to the Degree of B.Sc. in Nursing.

Students from Alberta high schools seeking admission to the University will be required to present:

- (a) a High School Graduation Diploma with
- (b) "B" or higher standing in the following Grade XII examination subjects:
 - 1. English 30,
 - 2. Social Studies 30,
 - 3. Chemistry 30,
 - 4. 5 and 6. *Three of:*
Mathematics 30,
French 30 or German 30 or Latin 30,
Physics 30;
Biology 32;

(c) an average in these six courses of at least 60%.
Students who completed Grade XII in 1954 or earlier will be given full consideration for admission.

II. Post-Basic Program Leading to the Degree of B.Sc. in Nursing.

SCHOOL OF NURSING—PROGRAM

Applicants must be registered nurses and present evidence of professional competence and the ability to carry and profit from postgraduate study. Students will normally be required to complete at least the year of specialization as a full-time intramural student of the School of Nursing, University of Alberta. Further requirements are:

1. Academic requirements outlined in "I" above.
2. Satisfactory clinical experience, including paediatric nursing, and psychiatric nursing. Applicants must submit a transcript from their Hospital School of Nursing. Deficiencies in clinical experience will have to be made up and arrangements relative to length and type of experience are subject to the approval of the University.

Medical Examinations

Students in B.Sc. Nursing will undergo a further medical examination and interview at the University of Alberta Hospital, and must satisfy the hospital regarding their general suitability for nursing before being accepted into the clinical years of the program (second, third and fourth years). Arrangements for the medical examination and interview at the hospital will be made by the School of Nursing.

First Year

- I. Basic Program Leading to the Degree of Bachelor of Science in Nursing.

	Hours	
	Lecture	Laboratory
1. Chemistry 250 — Organic Chemistry (Prerequisite: Grade XII Chemistry 30)	3	3
2. English 240—Survey of English Literature	3	0
3. Nursing Education 231—Orientation to Nursing	2	0
	(Winter term)	
4. Psychology 202—Introduction to General Psychology	3	0
5. Sociology 202—Introductory Sociology	3	0
6. Zoology 220—Elementary Zoology	3	3
7. Physical Education 228 (W)—Recreational Activities	0	2

- II. Post Basic Program Leading to the Degree of Bachelor of Science in Nursing.

	Hours	
	Lecture	Laboratory
1. Chemistry 250—Organic Chemistry (Prerequisite: Grade XII Chemistry 30)	3	3
2. English 240—Survey of English Literature	3	0
3. Psychology 202—Introduction to General Psychology	3	0
4. Sociology 202—Introductory Sociology	3	0
5. Zoology 220—Elementary Zoology	3	3
6. Physical Education 228 (W)—Recreational Activities	0	2

FACULTY OF GRADUATE STUDIES

Opportunities for Graduate Studies are available in the following departments at the University of Alberta, Calgary, although full facilities are not available in some of these departments: Chemistry, English, Geology, History, Mathematics, Physics, Psychology, Sociology and Zoology.

Graduate degrees offered include the M.A., M.Sc., and Ph.D. Doctorate programs are offered by a few departments at Calgary. Full information on the opportunities in specific fields may be obtained from the department concerned. Calendars, general information and application forms may be obtained from the

Dean, Faculty of Graduate Studies,
University of Alberta,
Edmonton, Alberta, Canada.

Admission

Graduate Students are admitted to the faculty of Graduate Studies in one of the following categories:

1. *Candidate for a master's degree.*
2. *Provisional candidate for a doctor's degree:*
All Ph.D. and Ed.D. students are classified as provisional candidates until they have passed their Candidacy Examinations.
3. *Probationary graduate student* is one whose university record is either:
(a) Difficult to assess (e.g. some foreign students) or
(b) below the standard normally required.
4. *Conditional graduate student* is one who is required to take undergraduate courses prerequisite to, and in addition to, the graduate program. Fees for such courses are not included in graduate program fees.
5. *Special graduate student* is one who wishes to take graduate courses for purposes other than degree credit at this university.

Intersession

Graduate students carrying on full-time research or other academic work during the summer months may receive residence credit by registering with the Faculty of Graduate Studies for the whole, or a portion, of the period extending from the end of one regular winter session to the beginning of the next: this period is known as the Intersession. Application for such registration should be made as soon as the applicant's plans for this period are final.

Vise Fee

Students entering the Faculty of Graduate Studies are exempt from vise fees for the evaluation of educational documents.

Deadlines

Applications for admission to Graduate Studies—August 31.

PART VII

Courses of Instruction

PART VII

Courses of Instruction

COURSES OF INSTRUCTION

- Announcement* The announcement of courses in this section refers to the academic year 1963-64.
- Arrangement* The courses of instruction in this section are arranged for convenience in alphabetical order.
- Changes* The University reserves the right to modify or withdraw any course without notice.
- Instructions* The list of instructional staff at the beginning of each section refers as far as possible to the academic year 1963-64. Names are listed alphabetically within the ranks.
- Numbering* The numbering of each course indicates the level of the course.
- Courses numbered 100 to 299 inclusive, described as junior, are open to first-year students, and are also available as options in senior years of certain programs. Courses numbered 300 to 499, described as senior, are designed primarily for students beyond the first year at University.
- Hours* The hours of instruction for both terms of the winter session are shown at the top of the course descriptions.
- The first figure in each term indicates lecture hours, and the second, laboratory hours (viz. 3-0; 3-0).
- The letter "s" attached to a figure signifies seminar hours.
- Prerequisites* These are stated in terms of the prior completion of certain specified courses.
- Corequisites* These are stated in terms of the completion of certain specified courses at the same time.
- Texts* Texts are announced only as a guide to the intending student. The University reserves the right to change texts in any course without notice.
- Bookstore* For the convenience of students, the University maintains a bookstore on the campus where textbooks prescribed in the university calendar may be obtained. Stationery, drawing materials, gymnasium wear and other accessories are also available at special student prices.

COURSES OF INSTRUCTION

ACCOUNTING

Assistant Professor R. W. Losie

200.	Management Accounting	(3-2; 3-2)	Lect.	TuTh	9:00- 9:50
			Tutorial A	F	4:00-4:50
				B F	11:00-11:50
				C F	2:00-2:50
			Lab. A	Th	1:00-2:50
				B Th	3:00-4:50
				C Tu	1:00-2:50

This course is designed to present the language of accounting to the student and a description of the important concepts, rules and techniques of financial accounting. It provides a background of accounting information that is useful to management in the recognition or solution of management problems in the areas of control and planning, covered by means of lectures and case studies.

ANTHROPOLOGY

ARCHEOLOGY

(See Sociology and Anthropology)

ART

Associate Professor: Miss H. B. Stadelbauer

Assistant Professor: E. M. Dodd

Assistant Professor: H. M. Kiyooka

200.	Introduction to the History of Art	(3-0; 3-0)		MWF	1:00-1:50
230.	Fundamentals of Design	(1-4; 1-4)	Sec. A	MW	2:00-3:50
				F	2:00-2:50
			Sec. B	MW	2:00-3:50
				F	2:00-2:50
			Sec. C	Tu	2:00-4:50
				Th	2:00-3:50
			Sec. D	MW	11:00-12:50
				F	11:00-11:50
240.	Fundamentals of Drawing	(3-3; 3-3)		MWF	2:00-3:50
250.	Fundamentals of Painting	(3-3; 3-3)		Tu	1:00-3:50
				Th	1:00-3:50
330.	Advanced Composition 1	(2-3; 2-3)		Tu	2:00-4:50
				Th	2:00-3:50

200.	<i>Introduction to the History of Art</i>	(3-0; 3-0)
	Beginning with a discussion of fundamental concepts underlying painting and the plastic arts, this course investigates the major styles and contributions of each important period.	

COURSES OF INSTRUCTION

230. *Fundamentals of Design* (1-4; 1-4)
The study and practical application of principles of composition and picture-making, methods of construction in design, and the use of conventional and abstract forms.
240. *Fundamentals of Drawing* (3-3; 3-3)
Theory and practice of drawing; analysis of masters' drawings; study of line, form, light and shade; portrait and figure construction, life drawing, using both long and quick poses.
Text: Nicolaides, *The Natural Way to Draw*.
250. *Fundamentals of Painting* (3-3; 3-3)
Theory and practice of painting in oils; forms in space; analysis of line and form in painting; study of arrangements, both two-dimensional and three-dimensional; use of light and shade; application of pigments in both monochrome and color.
Prerequisite: Art 230 or 240.
300. *History of European Art—3rd Century - 16 Century*—H. Kiyooka (3-0; 3-0)
A more detailed study of Early Christian, Byzantine, Medieval, and Renaissance periods of European Art.
Prerequisite: Art 200.
(Not offered in 1963-64)
330. *Advanced Composition I*—H. B. Stadelbauer (2-3; 2-3)
Analysis of master compositions from the various schools of painting; theory and practice in arranging forms, both in dimensional and in space; exercises in figure grouping; studies in non-figurative composition including an introduction to graphic design.
Prerequisite: Art 230 and Art 240, or consent of department.
Text—Rasmusen: *Art Structure*.
400. *European Art—1600-1900* — H. Kiyooka (3-0; 3-0)
A study of the French, Dutch, Spanish, German, and English periods between the end of the 16th century and the end of the 19th century.
Prerequisite: Art 200.
(Not offered in 1963-64)
401. *Twentieth Century Art* — H. Kiyooka (3-0; 3-0)
The development of painting, sculpture and architecture from the 19th century to present times.
Prerequisite: Art 200.
(Not offered in 1963-64)

ASTRONOMY

253. *Astronomy* (3-0; 3-0)
Astronomical co-ordinate systems and problems related to them; the solar system; the stars and discussions concerning their origin, energy, structure and motions. The universe, its population and structure.
Prerequisite: Mathematics 30.
Text: Baker *Astronomy* (Van Nostrand).
(Not offered 1963-64)

COURSES OF INSTRUCTION

478. (formerly Physics 478)

The Physical Universe (3-3; 3-3) Lect. TuWF 4:00-4:50
The historical development of astronomy. Introduction to the physics of the earth and its environment. The sun and the solar system; cosmic radiation. Astrophysics and radio astronomy. An introduction to cosmological theory.

Prerequisites: Physics 240, and 340 or 380 or consent of instructor.

Texts—To be announced.

BOTANY

Associate Professor: A. R. Prince.

Assistant Professor: Dr. C. D. Bird.

Sessional Instructor: P. Barclay-Estrup.

- | | | | | | |
|------|-----------------------------|------------|----------------|-------|-------------|
| 271. | Introductory Botany | (3-3; 3-3) | Lect. | A MWF | 11:00-11:50 |
| | | | | B MWF | 2:00-2:50 |
| | | | Lab. | A Tu | 9:00-11:50 |
| | | | | B Tu | 2:00-4:50 |
| | | | | C W | 2:00-4:50 |
| | | | | D Th | 2:00-4:50 |
| | | | | E F | 9:00-11:50 |
| | | | | F F | 2:00-4:50 |
| | | | | G S | 9:00-11:50 |
| 370. | Flowering Plants | (3-3; 3-3) | to be arranged | | |
| 371. | Plant Anatomy & Histology | 3-3; 3-3 | Lect. | MWF | 8:00-8:50 |
| | | | Lab. | Th | 9:00-11:50 |
| 372. | Plant Geography | (0-0; 3-0) | to be arranged | | |
| 373. | Algae, Lichens & Bryophytes | (3-3; 3-3) | to be arranged | | |
| 375. | Lower Vascular Plants | (3-3; 3-3) | to be arranged | | |
| 472. | Plant Ecology | (3-0; 0-0) | to be arranged | | |

271. (formerly 201) *Introductory Botany* (3-3; 3-3)
Basic anatomy, physiology, heredity, and ecology of the flowering plants. A survey of the morphology, life-cycles, and evolution of the main groups of the Plant Kingdom.
Text: Hill, Overholte, Papp and Grove *Botany* (1960).

370. *Flowering Plants*—R. T. Ogilvie (3-3; 3-3)
Morphology, classification, and evolution of the flowering plants. Species concepts, principles and nomenclature, and related fields will be considered. Emphasis will be placed on those plants making up the local flora.
Prerequisite: Botany 271 or 201; or consent of instructor.

371. *Plant Anatomy*—A. R. Prince (3-3; 3-3)
Elements of anatomy of the higher vascular plants (Angiosperms), with emphasis on the development of the root, stem, leaf, and flower. Environmental control of plant morphogenesis. An introduction to plant microtechnique.
Prerequisite: Botany 271 or 201; or consent of instructor.

COURSES OF INSTRUCTION

372. *Plant Geography*—R. T. Ogilvie (0-0; 3-0)
The earth's main vegetational types and the significance of their present day distribution. Emphasis will be placed on the vegetation of North America.
Prerequisite: Botany 271 or 201; or consent of instructor.
373. *Algae, Lichens and Bryophytes*—C. D. Bird (3-3; 3-3)
The morphology, classification, and evolution of Algae, Lichens and Bryophytes. Those species occurring in Alberta will be emphasized.
Prerequisites: Botany 271 or 201; or consent of instructor.
375. *Lower Vascular Plants*—A. R. Prince (3-3; 3-3)
Morphology, taxonomy, and evolution of the seedless vascular plants and Gymnosperms.
Prerequisite or corequisite: Botany 271 or 201, and 371 or 310; or consent of instructor.
472. *Plant Ecology*—C. D. Bird (3-0; 0-0)
Plants in relation to their environment. Conservation and forestry applications will be considered.
Prerequisite or corequisite: Botany 370 or 300; or consent of Instructor.

BUSINESS

Associate Professor Wm. A. Preshing

- | | | | |
|-------------------------------|------------|---------|----------------------------|
| 202. Introduction to Business | (2-0; 2-0) | F
F | 9:00-9:50
3:00-3:50 |
| 351. Data Processing | (1-2; 0-0) | M
Th | 11:00-11:50
10:00-11:50 |
| 353. Operations Research | (0-0; 3-0) | MTuTh | 11:00-11:50 |
202. *Introduction to Business* (2-0; 2-0)
Survey of the place of business in modern society.
320. *Business Analysis* (3-0; 3-0)
Internal and external factors influencing prices, costs, output and growth of a business enterprise. Developments in organization analysis.
351. *Data Processing* (3-0; 0-0)
Programming and applications of digital computers to Business.
353. *Quantitative Methods* (0-0; 3-0)
Introduction to analytical methods for business decisions.

BUSINESS LAW

310. *Commercial Law* (3-0; 3-0) MWF 4:00-4:50
An introduction to the study of Commercial Law with special reference to the law of contracts; Bills of Sale; Chattel Mortgages and conditional sales; sales of goods, bulk sales; contracts of hiring; contracts of carriage including bills of lading; negotiable instruments; guarantees; real property, commercial associations including companies, partnership and agency; master and servant.

COURSES OF INSTRUCTION

478. (formerly Physics 478)

The Physical Universe

(3-3; 3-3) Lect. TuWF 4:00-4:50

The historical development of astronomy. Introduction to the physics of the earth and its environment. The sun and the solar system; cosmic radiation. Astrophysics and radio astronomy. An introduction to cosmological theory.

Prerequisites: Physics 240, and 340 or 380 or consent of instructor.

Texts—To be announced.

BOTANY

Associate Professor: A. R. Prince.

Assistant Professor: Dr. C. D. Bird.

Sessional Instructor: P. Barclay-Estrup.

271. Introductory Botany	(3-3; 3-3)	Lect.	A MWF	11:00-11:50
			B MWF	2:00-2:50
			Lab. A Tu	9:00-11:50
			B Tu	2:00-4:50
			C W	2:00-4:50
			D Th	2:00-4:50
			E F	9:00-11:50
			F F	2:00-4:50
			G S	9:00-11:50

370. Flowering Plants (3-3; 3-3) to be arranged

371. Plant Anatomy & Histology 3-3; 3-3 Lect. MWF 8:00-8:50
Lab. Th 9:00-11:50

372. Plant Geography (0-0; 3-0) to be arranged

373. Algae, Lichens & Bryophytes (3-3; 3-3) to be arranged

375. Lower Vascular Plants (3-3; 3-3) to be arranged

472. Plant Ecology (3-0; 0-0) to be arranged

271. (formerly 201) *Introductory Botany* (3-3; 3-3)

Basic anatomy, physiology, heredity, and ecology of the flowering plants. A survey of the morphology, life-cycles, and evolution of the main groups of the Plant Kingdom.

Text: Hill, Overholte, Papp and Grove *Botany* (1960).

370. *Flowering Plants*—R. T. Ogilvie (3-3; 3-3)

Morphology, classification, and evolution of the flowering plants. Species concepts, principles and nomenclature, and related fields will be considered. Emphasis will be placed on those plants making up the local flora.

Prerequisite: Botany 271 or 201; or consent of instructor.

371. *Plant Anatomy*—A. R. Prince (3-3; 3-3)

Elements of anatomy of the higher vascular plants (Angiosperms), with emphasis on the development of the root, stem, leaf, and flower. Environmental control of plant morphogenesis. An introduction to plant microtechnique.

Prerequisite: Botany 271 or 201; or consent of instructor.

COURSES OF INSTRUCTION

372. *Plant Geography*—R. T. Ogilvie (0-0; 3-0)
The earth's main vegetational types and the significance of their present day distribution. Emphasis will be placed on the vegetation of North America.
Prerequisite: Botany 271 or 201; or consent of instructor.
373. *Algae, Lichens and Bryophytes*—C. D. Bird (3-3; 3-3)
The morphology, classification, and evolution of Algae, Lichens and Bryophytes. Those species occurring in Alberta will be emphasized.
Prerequisites: Botany 271 or 201; or consent of instructor.
375. *Lower Vascular Plants*—A. R. Prince (3-3; 3-3)
Morphology, taxonomy, and evolution of the seedless vascular plants and Gymnosperms.
Prerequisite or corequisite: Botany 271 or 201, and 371 or 310; or consent of instructor.
472. *Plant Ecology*—C. D. Bird (3-0; 0-0)
Plants in relation to their environment. Conservation and forestry applications will be considered.
Prerequisite or corequisite: Botany 370 or 300; or consent of Instructor.

BUSINESS

Associate Professor Wm. A. Preshing

- | | | | |
|-------------------------------|------------|-------|-------------|
| 202. Introduction to Business | (2-0; 2-0) | F | 9:00-9:50 |
| | | F | 3:00-3:50 |
| 351. Data Processing | (1-2; 0-0) | M | 11:00-11:50 |
| | | Th | 10:00-11:50 |
| 353. Operations Research | (0-0; 3-0) | MTuTh | 11:00-11:50 |
202. *Introduction to Business* (2-0; 2-0)
Survey of the place of business in modern society.
320. *Business Analysis* (3-0; 3-0)
Internal and external factors influencing prices, costs, output and growth of a business enterprise. Developments in organization analysis.
351. *Data Processing* (3-0; 0-0)
Programming and applications of digital computers to Business.
353. *Quantitative Methods* (0-0; 3-0)
Introduction to analytical methods for business decisions.

BUSINESS LAW

310. *Commercial Law* (3-0; 3-0) MWF 4:00-4:50
An introduction to the study of Commercial Law with special reference to the law of contracts; Bills of Sale; Chattel Mortgages and conditional sales; sales of goods, bulk sales; contracts of hiring; contracts of carriage including bills of lading; negotiable instruments; guarantees; real property, commercial associations including companies, partnership and agency; master and servant.

COURSES OF INSTRUCTION

CHEMISTRY

Associate Professor: Dr. J. B. Hyne

Assistant Professors: Dr. F. C. Adam, Dr. D. A. Armstrong, Dr. M. H. Benn,
Dr. P. J. Krueger, Dr. T. S. Sorenson, Dr. D. F. Tavares

Sessional Lecturer: Dr. Mary R. S. Weir

Research Associate: Dr. Ada L. Jacobson

230/232 Inorganic Chemistry

(3-1S-3; 3-1S-3)

(Science Honors & Chem. Gen.)

(1/3 1st year Engineers)

(2/3 1st year Engineers)

(Engineers)

(Science Honors & Chem. Gen.)

(Engineers)

(Engineers)

(Engineers) Tutorial

(Engineers)

(Engineers)

(A limited number of students from
other Faculties may be permitted
to register in the special sections
if space permits.)

Lect.	A	MWF	8:00-8:50
	B	MWF	2:00-2:50
	C	TuThS	8:00-8:50
	D	TuThS	11:00-11:50
Lab.	A	M	9:00-11:50
	B	M	2:00-4:50
	C	Tu	9:00-11:50
	D	Tu	2:00-4:50
	E	W	9:00-11:50
	F	W	2:00-4:50
	G	Th	9:00-11:50
	H	Th	2:00-4:50
	I	F	9:00-11:50
	J	F	2:00-4:50
	K	S	9:00-11:50
	A	M	12:00-12:50
	B	M	12:00-12:50
	C	M	4:00-4:50
	D	Tu	12:00-12:50
	E	W	12:00-12:50
	F	W	12:00-12:50
	G	W	4:00-4:50
	H	Th	12:00-12:50
	I	F	12:00-12:50
	J	F	12:00-12:50
	K	S	11:00-11:50

250. Organic Chemistry

(3-3; 3-3)

Lect.		MWF	3:00-3:50
Lab.	A	M	9:00-11:50
	B	Tu	9:00-11:50
	C	W	9:00-11:50
	D	Th	9:00-11:50
	E	F	9:00-11:50
	F	S	9:00-11:50
	G	Tu	2:00-4:50
	H	Th	2:00-4:50

312. Quantitative Analysis

(3-6; 3-6)

Lect.		MWF	10:00-10:50
Lab.	A	M	2:00-5:50
	B	Tu	8:00-11:50
	C	Th	8:00-11:50

350. Organic Chemistry

(3-3; 3-3)

Lect.		MW	3:00-3:50
		F	1:00-1:50
Lab.	A	M	9:00-11:50
	B	Tu	9:00-11:50
	C	W	9:00-11:50
	D	Th	9:00-11:50
	E	F	9:00-11:50

COURSES OF INSTRUCTION

					F	S	9:00-11:50
					G	Tu	2:00-4:50
					H	Th	2:00-4:50
					I	F	2:00-4:50
370.	Elementary Physical Chemistry	(3-3; 3-3)	Lect.			MW	12:00-12:50
			Lab.	A	Tu	F	2:00-4:50
				B	Th		2:00-4:50
374.	Physical Chemistry	(3-1; 3-1)	Lect.			MWF	12:00-12:50
		Tutorials		A	F		2:00-2:50
				B	F		3:00-3:50
				C	F		3:00-3:50
430.	Inorganic Chemistry	(3-3; 3-3)	Lect.			MWF	12:00-12:50
			Lab.			S	9:00-11:50
450.	Organic Chemistry	(3-3; 3-3)	Lect.			MWF	9:00-9:50
			Lab.	A	M		2:00-4:50
				B	W		2:00-4:50
455.	The Chemistry of Biological Systems	(0-0; 3-0)	2	Lect.		MWF	4:00-4:50
500.	Chemical Research						to be arranged
511.	Instrumental Methods of Analysis	(3-6; 0-0)	1	Lect.		M	8:00-8:50
						TuTh	1:00-1:50
			Lab.			ThF	2:00-4:50
531.	Advanced Inorganic Chemistry	(0-0; 3-3)	2	Lect.		MWF	12:00-12:50
			Lab.				to be arranged
550.	Organic Chemistry	(3-6; 3-6)				MWF	9:00-9:50
						MW	2:00-4:50
						F	11:00-11:50
							(plus certain other Chem. 350 Lab. sections as arranged)
561.	Advanced Organic Synthesis	(0-0; 3-0)	2	Lect.		TuTh	10:00-11:50
581.	Advanced Techniques in Physical Chemistry	(0-0; 3-6)	2	Lect.		M	8:00-8:50
						TuTh	1:00-1:50
			Lab.				as arranged with re- search groups
583.	Quantum Mechanics	(3-0; 0-0)	1	Lect.		TuTh	10:00-11:50
585.	Solution Kinetics	(3-0; 0-0)	1	Lect.		MW	10:00-11:50
587.	Infrared and Raman Spectra	(3-0; 0-0)	2	Lect.		TTh	8:00-9:50
591.	Radiation Chemistry	(3-0; 0-0)	1	Lect.		TuTh	8:00-9:50
602.	Departmental Research Seminar	(2S-0; 2S-0)				M	7:30-10:00 p.m.
631.	Inorganic Chemistry	(0-0; 3-0)	2	Lect.		MWF	1:00-1:50
651.	Organic Chemistry	(3-0; 0-0)	1	Lect.		MWThF	9:00-9:50
653.	Organic Chemistry	(0-0; 3-0)	2	Lect.		MWThF	9:00-9:50
671.	Physical Chemistry	(4-0; 0-0)	1	Lect.		MW	12:00-12:50
						F	2:00-2:50
							additional hour to be arranged
673.	Physical Chemistry	(0-0; 4-0)	2	Lect.		MW	12:00-12:50
						F	2:00-2:50
							additional hour to be arranged

COURSES OF INSTRUCTION

230. *Inorganic Chemistry* (3-1S-3; 3-1S-3)
Lectures: The fundamental concepts of chemistry as applied to the elements and their compounds.
Text: Sienko and Plane, *Chemistry*, 2nd ed.
Laboratory: The preparation of compounds, quantitative chemistry and semi-micro qualitative analysis.
Text: Frantz, *A Laboratory Study of Chemical Principles*.
Prerequisite: Chemistry 30.
232. *Modern Chemistry* (for Engineering Students) (3-1S-3; 3-1S-3)
Lectures: Stoichiometry, atomic and molecular structure, nuclear structure, thermodynamics, inorganic chemistry of important elements, elementary physical chemistry, synthetic organic chemistry and biochemistry.
Text: Sienko and Plane, *Chemistry*, 2nd ed.
Laboratory: Experiments in general chemistry, including some organic chemistry, quantitative chemistry and semi-microanalysis.
Text: Frantz, *A Laboratory Study of Chemical Principles*.
Prerequisite: Chemistry 30.
250. *Organic Chemistry* (3-3; 3-3)
Lectures: An introduction to a study of compounds of carbon.
Text: Noller, *Chemistry of Organic Compounds* OR Noller, *Textbook of Organic Chemistry*.
Laboratory: The preparation of some organic compounds.
Text: English, *Laboratory Manual of Organic Chemistry*.
Prerequisite: Chemistry 30.
312. *Quantitative Analysis*—D. A. Armstrong (3-6; 3-6)
Lectures: Principles and methods of quantitative analysis.
Textbook: Fischer, *Quantitative Chemical Analysis*, 2nd ed.
Laboratory: Gravimetric, volumetric, colorimetric and electrometric methods of analysis.
Prerequisites: Chemistry 230 or 232.
350. *Organic Chemistry*—D. F. Tavares (3-3; 3-3)
Lectures: An Introduction to a study of compounds of carbon.
Textbook: Noller, *Chemistry of Organic Compounds* OR Noller, *Textbook of Organic Chemistry*.
Laboratory: The preparation of some organic compounds.
Textbook: English, *Laboratory Manual of Organic Chemistry*.
Prerequisites: Chemistry 130 (1) or Chemistry 230 or 232.

COURSES OF INSTRUCTION

370. *Elementary Physical Chemistry*—F. C. Adam (3-3; 3-3)
 Lectures: Fundamental concepts of matter in relation to energy; thermo-chemistry; properties of gases, liquids and solids; solutions; equilibrium; phase rule; electrochemistry; colloids; kinetics or reaction.
 Textbook: Glasstone and Lewis, *Elements of Physical Chemistry*.
 Laboratory: Physico-chemical measurements.
 Textbook: *Physical Chemistry Laboratory Manual*, University of Alberta.
 Prerequisites: Chemistry 230 or 232; Physics 200 or 240; Mathematics 211 or 211 and 111 (formerly 201 or 200).
374. *Physical Chemistry* (for engineering students)—F. C. Adam (3-1; 3-1)
 Lectures: Kinetic theory, thermodynamics, solutions and phase equilibria, colloids and surface chemistry.
 Textbook: Glasstone and Lewis, *Elements of Physical Chemistry*.
 Laboratory: Physico-chemical measurements.
 Textbook: No lab text.
 Prerequisite: Chem. 232.
430. *Inorganic Chemistry*—T. S. Sorenson (3-3; 3-3)
 A study of the principles underlying inorganic chemistry.
 Laboratory: The preparation of some of the more unusual and different inorganic compounds.
 Prerequisite: Chemistry 230.
 Prerequisites or Corequisites: Chemistry 370 and 312.
 Textbook: To be announced.
450. *Organic Chemistry*—M. H. Benn (3-3; 3-3)
 Lectures: Continuation of the study of the aromatic and aliphatic compounds. General considerations and mechanisms involved in their reactions.
 Textbook: Cram and Hammond, *Organic Chemistry*.
 Laboratory: Preparation of some organic compounds.
 Prerequisites: Chemistry 230 or 232 and 250 or 350.
 Prerequisites or corequisites: Chemistry 370 and 312.
455. *The Chemistry of Biological Systems*—Staff (0-0; 3-0)
 Lectures: The structure of the cell including nucleic acids and their role. Proteins and enzymes. Topics in the chemistry of intermediate metabolism. Biokinetics and energetics. Photosynthesis, membrane phenomena and muscle action. A survey course with emphasis on interrelationships rather than rigorous detail.
 Textbooks: "Cellular Physiology and Biochemistry" (W. D. McElroy). "The Cell" (C. P. Swanson)—both from "Foundations of Modern Biology Series" (Prentice Hall, 1960). Selected reprints from the Scientific American Series on Biosciences.
 Reference: "Principles of Biochemistry" — White, Handler, Smith and Stetten (McGraw-Hill, 2nd ed., 1959).
 Prerequisites: Chem. 230, Chem. 250 or 350 and Zoology 220; or permission of the instructor.

COURSES OF INSTRUCTION

500. *Chemical Research*

Students in their fourth year of honors will pursue a half course in investigational work under the direction of a member of the department. The equivalent of at least eight hours per week of the second term must be spent on this course.

511. *Instrumental Methods of Analysis*—D. A. Armstrong, P. J. Krueger (3-6; 0-0)

Lectures: Theory and practice of instrumental methods of analysis.
Textbook: To be announced.

Prerequisite: Chemistry 312.

Prerequisite or Corequisite: Chemistry 370.

531. *Advanced Inorganic Chemistry*—T. S. Sorenson (0-0; 3-3)

Lectures: A study of the chemistry of the elements and of some of the factors which can affect the course of chemical reactions.

Laboratory: Preparation of a series of inorganic compounds which are designed to illustrate some of the less common and more difficult techniques of inorganic chemistry.

Prerequisites: Chemistry 350, 370, 312.

Textbook: To be announced.

550. *Organic Chemistry*—M. H. Benn (3-6; 3-6)

Lectures: A continuation of Chemistry 250 or 350.

Laboratory: Preparation of some compounds; the use of certain equipment such as that used for low-pressure hydrogenation, etc., special techniques such as chromatographic absorption, etc.

Textbook: Fuson, *Organic Chemistry*; Cram and Hammond, *Organic Chemistry*.

Prerequisites: Chemistry 250, 350, 312, and 370.

551. *Qualitative Organic Analysis* (not offered 1963-64) (0-0; 2-6)

A study of the characteristic reactions of the various groups of organic compounds and the classification and identification of a number of unknowns from these reactions.

Textbooks: Shriner, Fuson and Curtin, *The Systematic Identification of Organic Compounds* (4th edition); Cheronis and Entrikin, *Semimicro Qualitative Organic Analysis* (2nd edition).

Prerequisite: Chemistry 550.

553. *Chemistry of Carbohydrates*—M. H. Benn (not offered 1963-64) (0-0; 3-0)

Lectures: A study of monosaccharides, oligosaccharides and polysaccharides, their properties and derivatives.

Textbook: Pigman (Ed.), *The Carbohydrates*.

Reference: Advances in Carbohydrate Chemistry.

Prerequisites: Chemistry 450 or 550.

COURSES OF INSTRUCTION

555. *Theoretical Organic Chemistry*—J. B. Hyne
(not offered 1963-64) (0-0; 3-0)
Lectures: The application of current theories of the mechanism of various types of organic reactions.
Textbook: Gould, *Mechanism and Structure in Organic Chemistry*.
Prerequisites: Chemistry 550.
561. *Advanced Organic Synthesis*—D. F. Tavares (0-0; 3-0)
Modern synthetic methods and techniques in the field of organic chemistry with emphasis on recent literature.
Prerequisite: Chemistry 450 or 550.
Textbook: To be announced.
575. *Gas Kinetics*—D. A. Armstrong
(not offered 1963-64) (3-0; 0-0)
Lectures: Empirical treatment of reaction rates, collision theory, transition state theory, chain reactions, some specific reaction mechanisms.
Textbook: Frost and Pearson; *Kinetics and Mechanism*, 2nd ed.
Reference: Foundations of Chemical Kinetics—Benson.
Prerequisite: Chemistry 370.
579. *Chemical Thermodynamics*—A. L. Jacobson
(not offered 1963-64)* (3-0; 0-0)
Lectures: Application of the three laws of thermodynamics to chemical systems; thermodynamics of systems of variable composition.
Textbook: Glasstone, *Thermodynamics for Chemists*.
Prerequisite: Chemistry 370.
581. *Advanced Techniques in Physical Chemistry*—Staff (0-0; 3-6)
A discussion of High Vacuum Technique including the theory and methods of production, measurements of high vacua, and the manipulation of gases and liquids in such systems. The fundamentals of electronics and electronic equipment used in the measurements is also included.
Prerequisite: Chemistry 370.
Textbook: None.
583. *Quantum Mechanics*—F. C. Adams (3-0; 0-0)
Lectures: An elementary course in quantum mechanics with applications to chemical systems.
Textbook: Eyring, Walter, Kimball, *Quantum Chemistry*.
Prerequisite: Chemistry 370.
585. *Solution Kinetics*—J. B. Hyne (3-0; 0-0)
Lectures: The study of chemical reactions in non-polar and polar solvents. Discussion of solvation phenomena.
Textbook: Frost and Pearson, *Kinetics and Mechanisms*.
Prerequisites: Chemistry 370, 555.

COURSES OF INSTRUCTION

587. *Infrared and Raman Spectra*—P. J. Krueger (0-0; 3-0)
Lectures: The relation of infrared and Raman spectra to molecular structure, experimental techniques, and effect of solvent and other factors influencing spectra. Current research literature in the field will be stressed.
Prerequisite: Chemistry 370, or permission of instructor.
Textbook: To be announced.
589. *Statistical Mechanics* (not offered 1963-64*) (0-0; 3-0)
An introduction to statistical mechanics. Applications to problems of chemical interest will be stressed.
References: Fowler and Gugenheim, *Statistical Thermodynamics*; Davidson, *Statistical Mechanics*; Rushbrooke, *Statistical Mechanics*.
591. *Radiation Chemistry*—D. A. Armstrong (3-0; 0-0)
Lectures: Brief discussion of radiation sources, interaction of radiation with matter, chemical effects of radiation.
References: Hine and Brownell, *Radiation Dosimetry*; Friedlander and Kennedy, *Radio and Nuclear Chemistry*; Haissinsky, *The Chemical and Biological Action of Radiations*; Burton, *et al*, *Comparative Effects of Radiation*.
593. *Spectroscopy and Molecular Structure*—P. J. Krueger (not offered 1963-64*) (3-0; 0-0)
Lectures: A study of the spectral characteristics of matter. This will include the application of ultra-violet, visible, infrared, microwave, Raman, atomic, N.M.R. and E.S.R. spectroscopy to problems of molecular structure.
References: West, *Chemical Applications of Spectroscopy*, Vol. IX; Baumann, *Absorption Spectroscopy*; Rao, *Ultraviolet and Visible Spectroscopy*.
Prerequisites: Chemistry 450 or 550 and Chemistry 370 or 372.
602. *Departmental Research Seminar*—Staff (2S-0; 2S-0)
Lectures: Reports on studies of the literature or of current research in the department. Required of all graduate students and fourth year honors students in chemistry.

*Courses noted as "not offered 1963-64" will be offered in 1964-65.

CLASSICS

Survey Courses in the Life and Thought of the Ancient World

(See also Greek and Latin)

346. *Religion in Classical Times*—A. D. Winspear (3-0; 3-0)
An historical and philosophical survey.
Lectures will be given on the totemic background of ancient religion, Matriarchy, the Homeric Pantheon, the Chthonic deities, the Mystery Religions, the Religion of Numa, Gnosticism, Sycretism.
Reference: Guthrie, *The Greeks and their Gods*; Ward Fowler, *The Religious Experience of the Roman People*.

(Not offered 1963-64)

COURSES OF INSTRUCTION

381. (formerly 352) *History of Ancient Greece: The Influence of the Greek Genius on the Western World*—A. D. Winspear (3-0; 3-0)
The story of the Hellenic world from its beginnings in the Minoan-Mycenaen civilizations of Crete and Greece and until the time of Alexander the Great with special attention to the political organization of the city-state and the beginnings of democracy, and to cultural and economic development.
Textbook: Trever, *History of Ancient Civilization*, Vol. I.
(Not offered 1963-64)
382. (formerly 350) *Greek Classics in English* (3-0; 3-0) MWF 8:00-8:50
Greek Life and Letters from Homer to Lucian.
A study of life and thought in the Greek world for the period indicated. This will be based (a) on the literary documents, (b) on the department's collection of slides illustrating Greek art, architecture and natural environment. While a knowledge of Greek is highly desirable, it is not a prerequisite, as the literary documents are dealt with in translation. This course is an option for second and third year students in Arts and Science in the A group.
Reading of selected Greek authors in translation.
Textbook: Livingstone, *The Greek Genius* (Oxford).
385. (formerly 353) *Roman History: The Roman Genius in the Mediterranean World* — A. D. Winspear (3-0; 3-0)
A study of the development of the Roman Republic and its expansion from city-state to empire. Particular attention will be given to the Roman methods of organization, law and government, and to the way in which the Romans impressed their culture on the Mediterranean world and on Western Europe.
Textbook: Trever, *History of Ancient Civilization*, Vol. II.
(Not offered 1963-64)

FIRST YEAR

GREEK

Professor A. D. Winspear

100. Beginner's Greek (5-0; 5-0)
MWF 5:00-6:15
300. Greek Authors & Prose Composition (3-0; 3-0)
361. Selections from Herodotus & Thucydides (3-1S; 3-1S) Lect.
Seminar to be arranged
100. *Beginners' Greek* (5-0; 5-0)
Texts: *An Introduction to Greek* (Crosby and Schaeffer, Allyn and Bacon); *A Greek Reader* (Colson, Macmillan).
300. *Greek Authors and Prose Composition* (3-0; 3-0)
A Greek Reader (Colson); Homer, Selections from the *Iliad*. *Greek Prose Composition* (North and Hillard: Rivington). A. D. Winspear.

COURSES OF INSTRUCTION

361. *Selections from Herodotus and Thucydides* (3-1s; 3-1s)
 Prose composition.
 Prerequisite: Greek 300. A. D. Winspear.
382. *Thucydides, Euripides, Plato*—A. D. Winspear (3-0; 3-0)
Thucydides, Book I (Marchant: MacMillan); *Euripides, Bacchae*,
 Dodd (Oxford), *Plato, Apology*.
 (Not offered 1963-64)

Honors and Graduate Courses

501. *Plato*—A. D. Winspear. Not offered 1963-64.
504. *Greek Drama* (3-0; 3-0)
 Greek Drama. *Aeschylus Agamemnon*; *Sophocles, Philoctetes*; *Euripides Bacchae*, *Aristophanes Knights, Clouds*.
505. *Aristotle—Nichomachean Ethics*—A. D. Winspear (3-0; 3-0)
511. *Advanced Greek Prose Composition* (3-0; 3-0)
 Survey Courses in the Life and Thought of the Ancient World.

LATIN

Professor: A. D. Winspear

- | | | | |
|------|-----------------------------------|--------------|-------------------------------------|
| 200. | Latin Authors & Prose Composition | (3-0; 3-0) | MWF |
| 300. | Latin Authors & Prose Composition | (3-0; 3-0) | MWF |
| 361. | Selections from Livy & Tacitus | (3-1S; 3-1S) | Lect. MWF
Seminar to be arranged |
| 503. | Lucretius, <i>De Rerum Natura</i> | (3-0; 3-0) | to be arranged |
| 511. | Advanced Latin Prose Composition | (1-0; 1-0) | to be arranged |
-
200. *Latin Authors and Prose Composition* (3-0; 3-0)
 Texts: *Caesar, De Bello Gallico*, Book IV (Shuckburgh: Macmillan);
Cicero, An Easy Selection from Cicero's Correspondence (Duff:
 Macmillan); *Vergil, Aeneid*, Book II (Sidgwick: Macmillan). *Latin*
Prose Composition (Franklin and Bruce: Longman, Green and
 Co.).
 Prerequisite: Latin 30.
300. *Latin Authors and Prose Composition*—A. D. Winspear (3-0; 3-0)
A Latin Reader (Petrie: Oxford); *Latin Prose Composition* (Brad-
 ley's Arnold, Ed. Mountford). Sight translation and principles of
 language.
 Prerequisite: Latin 200.

COURSES OF INSTRUCTION

361. *Selections from Livy and Tacitus* (3-1s; 3-1s)
 Prose composition.
 Prerequisite: Latin 300 (E. Swart).

Honors and Graduate Courses

503. *Lucretius, De Rerum Natura*—A. D. Winspear (3-0; 3-0)
505. *Vergil, Complete Works* (3-0; 3-0)
 (Not offered 1963-64)
511. *Advanced Latin Prose Composition*—A. D. Winspear (1-0; 1-0)

FIRST YEAR

COMPUTING CENTRE

Staff of the Department of Mathematics

251. *Elements or Programming* (1-2; 0-0) or (0-0; 1-2)
 Programming of an electronic digital computer in machine language, symbolic language, and algorithmic language.
 Prerequisite: Consent of instructor.
Note: This course does not carry credit towards a degree.

EDUCATION

EDUCATIONAL ADMINISTRATION

Associate Professor J. D. Aikenhead.

Assistant Professor A. L. Brown

Ed. ADM 261. Educational Administration (3-0; 0-0 or 0-0; 3-0)	Sec. A	MWF	2:00-2:50
	B	MWF	2:00-2:50
	C	MWF	3:00-3:50
	D	TuThS	9:00-9:50
	E	TuThS	9:00-9:50
	F	MWF	4:00-4:50
	G	MWF	4:00-4:50
	H	MWF	10:00-10:50
	I	MWF	10:00-10:50
	J	MWF	8:00-8:50
	K	MWF	3:00-3:50
Ed. ADM 261. Education Administration (for Industrial Arts Students) (2-0; 2-0)	L	S	10:00-11:50
Ed. ADM 461. Educational Administration (2-0; 2-0)	A	TuTh	2:00-2:50
	B	TuTh	3:00-3:50
Ed. ADM 525. Educational Supervision (0-0; 3-0)	S		9:00-11:50
Ed. ADM 561. Principles of Educational Administration (3-0; 0-0)	S		9:00-11:50

COURSES OF INSTRUCTION

CURRICULUM AND INSTRUCTION

Professor T. G. Finn

Associate Professors: F. E. Churchley, A. A. Gibb, E. M. King, S. A. Lindstedt, B. M. Newton, S. Norris, H. B. Stadelbauer.

Assistant Professors: M. A. Beaton, M. Chorny, E. M. Dodd, Q. D. Doolittle, P. Eccles, S. G. Finn, W. E. Gandy, H. Kiyooka, D. MacIntosh.

Ed. C.I. 205.	Elementary School Social Studies (205/231)	Sec. A	MTuWTh	1:00-1:50
		B	MTuWTh	1:00-1:50
		C	MTuWTh	2:00-2:50
Ed. C.I. 209.	Elementary School Art (Full Year)	Sec. C	TuTh	8:00-8:50
		A	TuTh	9:00-9:50
		B	TuTh	10:00-10:50
	Through the instructor in Ed. C.I. 209, the student will pay a fee of \$4.00 to cover the costs of instructional supplies.			
Ed. C.I. 213.	Elementary School Music (Full Year)	Sec. A	MW	8:00-8:50
		B	MW	9:00-9:50
		C	MW	10:00-10:50
Ed. C.I. 221.	Elementary School Reading (221/237)	Sec. A	MTuWTh	10:00-10:50
		B	MTuWTh	8:00-8:50
		C	MTuWTh	9:00-9:50
Ed. C.I. 227.	Elementary School Mathematics	Sec. A	MTuWTh	11:00-11:50
		B	MTuWTh	11:00-11:50
		C	TTh	5:00-6:15
Ed. C.I. 231.	Elementary School Science (205/231)	Sec. A	MTuWTh	1:00-1:50
		B	MTuWTh	1:00-1:50
		C	MTuWTh	2:00-2:50
Ed. C.I. 237.	Elementary School Language (221/237)	Sec. A	MTuWTh	10:00-10:50
		B	MTuWTh	8:00-8:50
		C	MTuWTh	9:00-9:50
Ed. C.I. 254.	Secondary School English (3-0; 3-0)	Sec. A	MWThF	9:00-9:50
		B	MWThF	8:00-8:50
Ed. C.I. 258.	Secondary School Foreign Language (3-0; 3-0)	Lect.	MWThF	11:00-11:50
Ed. C.I. 266.	Secondary School Social Studies (3-0; 3-0)		MWThF	8:00-8:50
Ed. C.I. 270.	Secondary School Mathematics (3-0; 3-0)		MWThF	9:00-9:50
Ed. C.I. 274/474.	Secondary School Biological Sciences (3-L; 3-L)		MWThF	10:00-10:50
Ed. C.I. 278/478.	Secondary School Physical Sciences (3-L; 3-L)		MWThF	9:00-9:50
Ed. C.I. 298/498.	Secondary School Art (3-0; 3-0)		MWThF	9:00-9:50
Ed. C.I. 291/491.	Secondary Physical Education (3-0; 3-0)		MWThF	9:00-9:50
Ed. C.I. 292/492.	Secondary School Music (3-0; 3-0)		MWThF	9:00-9:50
Ed. C.I. 306.	Enterprise Education (3-0; 3-0)		MW	5:00-6:15
Ed. C.I. 310.	Art in the Elementary School (3-0; 3-0)		MW	5:00-6:15

COURSES OF INSTRUCTION

Ed. C.I. 322.	Reading at Upper Elementary & Secondary Levels (3-0; 3-0)		W S	4:30-6:00 9:00-10:30
Ed. C.I. 328.	Arithmetic in the Elementary & Jr. High School Grades (3-0; 3-0)		MW	5:00-6:15
Ed. C.I. 332.	Science (3-0; 3-0)		TuTh	5:00-6:15
Ed. C.I. 336.	French in the Elementary School (3-0; 3-0)	Sec. A	MW	4:30-6:00
		Sec. B	TTh	4:30-6:00
Ed. C.I. 402.	Elementary (3-3; 3-3)		MTuWThF	10:00-10:50
Ed. C.I. 404.	Elementary (3-1; 3-1)		MTuWThF	11:00-11:50
Ed. C.I. 454.	Secondary School English (3-0; 3-0)		MWThF	10:00-10:50
Ed. C.I. 456.	Advanced Secondary School English (3-0; 3-0)		Tu Th	4:00-5:00 3:00-5:00
Ed. C.I. 458.	Secondary School Foreign Languages (3-0; 3-0)		MWThF	11:00-11:50
Ed. C.I. 466.	Secondary School Social Studies (3-0; 3-0)		MWThF	10:00-10:50
Ed. C.I. 470.	Secondary School Mathematics (3-0; 3-0)		MWThF	10:00-10:50
Ed. C.I. 474/274.	Secondary School Biological Sciences (3-L; 3-L)		MWThF	10:00-10:50
Ed. C.I. 478/278.	Secondary School Physical Sciences (3-L; 3-L)		MWThF	9:00-9:50
Ed. C.I. 480.	Advanced Secondary School Physical Sciences (3-L; 3-L)		MW	4:30-6:00
E. C.I. 490.	(as 290)			
Ed. C.I. 491.	(as 291)			
Ed. C.I. 492.	(as 292)			

FOUNDATIONS OF EDUCATION

Associate Professors—R. N. Anderson, H. Zentner.
Assistant Professor J. E. Bowen.

Ed. FDN 201.	Introduction to Education (3-0; 0-0 or 0-0; 3-0)	2	Sec. A	MWF	2:00-2:50
		2	B	MWF	2:00-2:50
		2	C	MWF	2:00-2:50
		2	D	TuThS	9:00-9:50
		1	E	TuThS	9:00-9:50
		1	F	MWF	4:00-4:50
		1	G	MWF	4:00-4:50
		1	H	MWF	4:00-4:50
		1	I	MWF	10:00-10:50
		2	J	MWF	8:00-8:50
Ed. FDN 414.	Sociology of the School (3-0; 3-0)		Sec. A	MWF	2:00-2:50
			B	TuTh	5:00-6:15

COURSES OF INSTRUCTION

Ed. FDN 492.	Philosophy of Education (3-0; 3-0)	Sec. A	MWF	3:00-3:50
		B	TuTh	1:30-2:50
Ed. FDN 594.	History of Education (3-0; 3-0)		MW	5:00-6:15

EDUCATIONAL PSYCHOLOGY

Professor J. G. Woodsworth
Associate Professor A. G. Storey
Assistant Professors B. P. Frost, J. G. Snider

Ed. PSY 276.	Introduction to Educational Psychology (3-0; 3-0)	Sec. A	MWF	9:00-9:50
		B	MWF	9:00-9:50
		C	MWF	3:00-3:50
		D	MWF	3:00-3:50
		E	TuThS	8:00-8:50
		F	TuThS	8:00-8:50
		G	TuThS	10:00-10:50
		H	TuThS	10:00-10:50
		I	MWF	12:00-12:50
		J	MWF	4:00-4:50
		K	MWF	1:00-1:50
Ed. PSY 308.	Guidance (3-0; 3-0)		MWF	2:00-2:50
Ed. PSY 310.	Personal Adjustment in Education (3-0; 3-0)		MWF	2:00-2:50
Ed. PSY 458.	Psychology & Education of Emotionally Disturbed Children (3-0; 3-0)		MW	5:00-6:15
Ed. PSY 474.	Education Clinic (3-3; 3-3) Lab.		MWF Tu	1:00-1:50 2:00-3:50
Ed. PSY 476.	Educational Psychology 3-0; 3-0)	Sec. A	MWF	2:00-2:50
		B	MWF	11:00-11:50
		C	TuThS	10:00-10:50
		D	MWF	4:00-4:50
Ed. PSY 478.	Measurement and Evaluation (3-0; 3-0)	Sec. A	MWF	3:00-3:50
		B	TuTh	5:00-6:15
Ed. PSY 508.	Educational Guidance (3-0; 3-0)		MW	5:00-6:15

EDUCATION—INDUSTRIAL ARTS

Staff of the Faculty of Education and the Southern Alberta Institute of Technology.

Timetable to be arranged.

COURSES OF INSTRUCTION

CHEMICAL ENGINEERING

Ch.E. 252. Engineering Materials II (1st term Met.E. 252)

(0-0; 2-0) TuTh 1:00-1:50

A discussion of the properties of non-metallic materials including natural fibers and resins, synthetic polymers, elastomers and ceramics; the electrical and thermal properties of non-metallics; concrete and wood.

Textbook: Van Vlack, *Elements of Materials Science*.

CIVIL ENGINEERING

Civil Engineering 153—Surveying (0-0; 1-0)* Sec. A Tu 10:00-10:50
 *plus 3½ weeks survey school B W 9:00-9:50
 C F 10:00-10:50

Civil Engineering 262—

Strength of Materials (2-4/2; 2-4/2) Lect. A WF 9:00-9:50
 B TuTh 10:00-10:50
 Lab. A1, A2 Tu 2:00-4:50
 B1, B2 Th 2:00-4:50

Drafting and Graphics 151 (0-3; 2-4)

Lec. A TuTh 9:00-9:50
 B TuTh 10:00-10:50
 C MW 10:00-10:50
 Lab. A1 W 2:00-4:50
 B1 F 2:00-4:50
 C1 Th 2:00-4:50
 Lab. A2 W 2:00-3:50
 F 9:00-10:50
 B2 TuF 2:00-3:50
 C2 MTh 2:00-3:50

C.E. 153. Surveying (Associate Professors: W. L. Bigg and W. H. Stilwell)
 (0-0; 1-0 + 3½ weeks at end of 2nd term)

The theory and practice of plane and topographic surveying, including construction, use and care of instruments; computation of areas; methods of topographic surveying; route surveys, including curve and earthwork problems, land-survey systems.

Lectures continue daily during the survey school period.

Field work includes chaining, rodding, levelling, transit work, plane table survey, plotting of field notes.

C.E. 262. Strength of Materials (2-4/2; 2-4/2)

Normal stress and normal strain; shearing stress and shearing strain; Mohr's circle for stress; temperature stresses; stresses in beams; beam deflections; statically indeterminate beams; torsion; combined stresses; columns.

Laboratory exercises to illustrate the physical properties of materials, including the testing of ordinary engineering materials in tension, compression, bending, twisting, hardness and impact.

COURSES OF INSTRUCTION

D.G. 151. *Drafting and Graphics* (Associate Professors: W. L. Bigg and W. H. Stilwell) (0-3; 2-4)
Freehand tracing, sketching and instrumental drawing; reproduction of drawings, orthographic projection; fundamental views; elementary problems; surfaces and solids.

ELECTRICAL ENGINEERING

E.E. 252. *Electrical Circuits* (2-3/2; 2-3/2)
Lect. MW 8:00-8:50
Lab. A1, A2 Tu 2:00-4:50
B1, B2 Th 2:00-4:50
A.C. series and parallel circuits, active and reactive energy, network theorems, transformers, measuring devices, transducers, rectifying elements, amplifying elements, and simple amplifiers.
Textbook: To be announced.

ENGINEERING PROFESSION

Associate Professor H. R. McArthur and Visiting Lecturers
Eng.P. 159. *Orientation to the Engineering Profession* (1-0; 0-0)
Tu 2:00-2:50
An outline of the development and history of the engineering profession; the branches of engineering; the work of the engineer in the various branches.

MECHANICAL ENGINEERING

Engineering Mechanics 150 (3-3/2; 0-0) Lect. A MWF 9:00-9:50
Statics B MWF 8:00-8:50
(2nd term Eng. Mech. 151) C MWF 1:00-1:50
Lab. A1, A2 Th 2:00-4:50
B1, B2 Th 2:00-4:50
C1, C2 M 2:00-4:50

Engineering Mechanics 151 (0-0; 3-0) Lect. A MWF 9:00-9:50
Particle Dynamics B MWF 8:00-8:50
(1st term Eng. Mech. 150) C MWF 1:00-1:50

Engineering Mechanics 250 (2-0; 2-0) Sec. A TuTh 8:00-8:50
B MW 10:00-10:50

E.M. 150. *Engineering Mechanics (Statics)* (Associate Professors H. A. R. dePaiva and W. H. Stilwell) (3-3/2; 0-0)
Fundamental principles of statics and their applications; stresses in simple frames; friction; centers of gravity; moments of inertia of plane areas. The laboratory periods will be devoted to the solution of selected problems by graphical and analytical methods.
Textbook: To be selected.

COURSES OF INSTRUCTION

- E.M. 151. *Engineering Mechanics (Particle Dynamics)* (Associate Professors H. A. R. dePaiva and W. H. Stilwell) (0-0; 3-0)
 The fundamental principles of mechanics applied to particles, kinematics, principles of kinetics, rectilinear translation, curvilinear translation; work and energy, impulse and momentum.
 Textbook: To be selected.
 Prerequisite: E.M. 150.
- E.M. 250. *Engineering Mechanics (Dynamics)* (3-0; 3-0)
 The fundamental principles of mechanics; kinematics; principles of kinetics; rectilinear translation; curvilinear translation; work and energy, impulse and momentum; periodic motion.
 Textbook: Meriam, *Mechanics, Part II: Dynamics* (Wiley).
 Prerequisite: Math. 202.
 Corequisite: Math. 303.

METALLURGICAL ENGINEERING

- Met.E. 252. *Engineering Materials I.*
 (2nd term Ch.E. 252) (2-0; 0-0) TuTh 1:00-1:50

ENGLISH

Professor: Dr. M. H. Scargill

Associate Professors: Dr. E. F. Guy, Dr. W. H. Magee

Assistant Professors: I. W. Adam, Dr. Jean Alexander, Dr. J. B. Brooks,
 Dr. D. E. Ray, Dr. R. H. Tener

Lecturers: Dr. J. P. Dougherty, M. J. Taylor

Sessional Lecturers: L. Bunyan, A. T. J. Cairns, Miss L. Challis, G. R. Morisset, Mrs. A. Ray

240. Survey of English Literature (3-0; 3-0)
- | | | |
|---------|-------|-------------|
| Sec. A1 | MWF | 8:00-8:50 |
| A2 | MWF | 8:00-8:50 |
| A3 | MWF | 8:00-8:50 |
| A4 | MWF | 8:00-8:50 |
| Sec. B1 | TuThS | 8:00-8:50 |
| B2 | TuThS | 8:00-8:50 |
| B3 | TuThS | 8:00-8:50 |
| Sec. C1 | MWF | 12:00-12:50 |
| C2 | MWF | 12:00-12:50 |
| C3 | MWF | 12:00-12:50 |
| C4 | MWF | 12:00-12:50 |
| C5 | MWF | 12:00-12:50 |
| C6 | MWF | 12:00-12:50 |
| Sec. D1 | MWF | 1:00-1:50 |
| D2 | MWF | 1:00-1:50 |
| D3 | MWF | 1:00-1:50 |
| D4 | MWF | 1:00-1:50 |
| D5 | MWF | 1:00-1:50 |
| D6 | MWF | 1:00-1:50 |
| D7 | MWF | 1:00-1:50 |
| D8 | MWF | 1:00-1:50 |

COURSES OF INSTRUCTION

		Sec. E1	MW	5:00-6:15
		E2	MW	5:00-6:15
		E3	MW	5:00-6:15
		E4	MW	5:00-6:15
		E5	MW	5:00-6:15
		Sec. F1	TuTh	5:00-6:15
		F2	TuTh	5:00-6:15
		F3	TuTh	5:00-6:15
		F4	TuTh	5:00-6:15
250.	English for Engineering Students			
	(2-0; 2-0)	Sec. A	W	9:00-9:50
			Th	10:00-10:50
		Sec. B	MW	10:00-10:50
		Sec. C	TuTh	1:00-1:50
288.	Development of the Language (3-0; 3-0)			
	(Education English Majors)		MWF	11:00-11:50
316.	Chaucer (3-0; 3-0)		MWF	11:00-11:50
332.	Shakespeare (3-0; 3-0)		MWF	4:00-4:50
342.	The Seventeenth Century (3-0; 3-0)		TuThS	11:00-11:50
348.	Restoration & 18th Century Literature (3-0; 3-0)		TuThS	10:00-10:50
364.	Victorian Poetry (3-0; 3-0)		MWF	10:00-10:50
380.	Early Twentieth Century (3-0; 3-0)		MWF	3:00-3:50
383.	American Literature from 1900 (3-0; 3-0)		MWF	3:00-3:50
384.	Canadian Literature (3-0; 3-0)		MWF	1:00-1:50
386.	Development of Modern English (3-0; 3-0)		TuTh	5:00-6:15
391.	Survey of the English Novel (3-0; 3-0)		MWF	4:00-4:50
397.	Studies in World Drama (3-0; 310)		MWF	2:00-2:50
398.	Children's Literature (3-0; 3-0)		MW	5:00-6:15
501.	Seminar (1S-0; 1S-0)			
502.	Seminar (1S-0; 1S-0)			
503.	Seminar (1S-0; 1S-0)			
504.	Tutorial			
240.	<i>A Survey of English Literature</i> (3-0; 3-0)			
	A survey of English Literature from Chaucer to the present day. Frequent essays will be set to afford practice in composition.			
	Texts: <i>The Literature of England</i> , Vols. I and II, 4th Edition, ed. Woods; <i>English Masterpieces</i> , Volume 7, ed. Mack, Dean, and Frost (Prentice Hall, 1961); <i>Harbrace College Handbook</i> (5th edition).			
	Note: English 240 is a prerequisite for senior English courses.			
250.	<i>A course in English for students in Engineering</i> (2-0; 2-0)			
	The reading of representative works of English literature, with some practice in writing.			
288.	<i>An Introduction to the English Language</i> (for students in Education) (3-0; 3-0)			
	An historical and structural study of the sounds, grammar, and vocabulary of English.			
	Texts: To be announced.			

312. *Old and Middle English*—E. F. Guy and M. H. Scargill (3-0; 3-0)
 Selections from the prose and poetry of the Old and Middle English periods.
 Texts: M. Anderson and B. C. Williams, *Old English Handbook* (Houghton Mifflin); K. Sisam, *Fourteenth Century Verse and Prose* (Oxford); Chaucer, *Complete Works*, ed. Robinson (Houghton Mifflin, 1957).
 (Not offered 1963-64)
316. *Chaucer*—E. F. Guy (3-0; 3-0)
 A study of the major works of Chaucer and of selected poets of the fifteenth century.
 Texts: To be announced.
332. *Shakespeare*—M. J. Taylor (3-0; 3-0)
 A study of Shakespeare's development as a dramatist. Eighteen plays will be discussed, not all in great detail. Among them will be the following: *The Comedy of Errors* or *Love's Labour's Lost*, *Richard III*, *Romeo and Juliet*, *Richard II*, *Henry IV*, Part I, *Henry IV*, Part II, *Henry V*, *Hamlet*, *Othello*, *King Lear*, *Macbeth*, *Antony and Cleopatra*, *The Tempest*.
 Texts: To be announced.
334. *Elizabethan and Jacobean Drama* (3-0; 3-0)
 A study of English Drama from 1580 to 1642. Among the dramatists to be studied will be Kyd, Marlowe, Shakespeare, Jonson, Webster, and Ford.
 Texts: To be announced.
 (Not offered 1963-64)
342. *The Seventeenth Century*—D. E. Ray (3-0; 3-0)
 Selections from the prose and poetry of the Seventeenth Century.
 Texts: R. J. C. Grierson, *Metaphysical Poetry* (Oxford); John Milton: *Prose Selections*, ed. M. Y. Hughes (Odyssey Press); *The Poems of John Milton* (Oxford Standard Authors); Browne, *Religio Medici* (Everyman's); Burton, *Anatomy of Melancholy*; Bunyan, *Pilgrim's Progress*.
348. *Restoration and Eighteenth Century Literature*—J. B. Brooks (3-0; 3-0)
 Special study of representative works of Rochester, Dryden, Swift, Pope, and Johnson, with additional reading in the drama, poetry, and prose of the period.
 Texts: Bredvold, McKillop & White eds., *Eighteenth Century Poetry & Prose* (Ronald Press); *Twelve Famous Plays of the Restoration and Eighteenth Century*, ed. C. A. Moore (Modern Library); Swift, *Gulliver's Travels*; *A Tale of a Tub*; *The Battle of the Books*, ed. R. B. Heilman (Modern Library); Boswell, *Boswell's London Journal*, ed. F. A. Pottle (New American Library).
356. *Poetry and Prose of the Romantic Period* (3-0; 3-0)
 Selections from Crabbe, Cowper, Burns, Blake, Wordsworth, Coleridge, Scott, Lamb, Hazlett, De Quincey, Byron, Shelley, Keats.
 Texts: *English Romantic Poetry and Prose*, ed. Noyes (Oxford U.P.).
 (Not offered 1963-64)

COURSES OF INSTRUCTION

364. *Poetry of the Victorian Period*—R. H. Tener (3-0; 3-0)
The works of Tennyson, Browning, Arnold, and other Victorian poets.
Text: *Victorian Poetry and Poetics*. ed. Houghton and Strange (Houghton-Mifflin).
380. *Early Twentieth Century*—L. Challis (3-0; 3-0)
Representative plays by Shaw, Wilde, Galsworthy, Yeats, Synge, O'Casey, T. S. Eliot, Fry. Conrad, *Lord Jim*; Wells, *Tono-Bungay*; Forster, *Passage to India*; Bennett, *The Old Wives' Tale*; Lawrence, *Sons and Lovers*; Joyce, *A Portrait of the Artist as a Young Man*; Huxley, *Antic Hay*; Woolf, *Mrs. Dalloway*; Williams, *Little Treasury of Modern Poetry* (Scribners).
383. *American Literature from 1900*—J. P. Dougherty (3-0; 3-0)
A selection of major writers from 1900 to the present.
Texts: To be announced.
(Not to be taken by students who have taken 394)
384. *Canadian Literature*—W. H. Magee (3-0; 3-0)
An historical and critical study of the literature of English-speaking Canada.
386. *The Development of Modern English* (3-0; 3-0)
The study of the nature and the development of the sounds, grammar, vocabulary, and spelling of the English language.
Texts: A. C. Baugh, *History of the English Language* (Appleton-Century); S. Robertson and F. Cassidy, *The Development of Modern English* (Prentice-Hall).
391. *A Survey of the English Novel*—Ian Adam (3-0; 3-0)
A study of the English novel from Defoe to the present day.
Texts: Fielding, *Joseph Andrews* (Rinehart); Richardson, *Clarissa* (Modern Library); Austen, *Emma* (Riverside); Scott, *Heart of Midlothian* (Rinehart); Dickens, *Oliver Twist* (Rinehart); *Great Expectations* (Rinehart); Thackeray, *Vanity Fair* (Riverside); George Elliot, *Silas Marner* (Rinehart); *Middlemarch* (Riverside); Bronte, *Wuthering Heights* (Rinehart); James, *Portrait of a Lady* (Riverside); Lawrence, *Rainbow* (Compass); Joyce, *Viking Portable James Joyce* (Viking); Scholes (ed.), *Approaches to the Novel* (Chandler).
397. *Studies in World Drama*—J. Alexander (3-0; 3-0)
A critical study of selected plays from various countries and periods.
Texts: William Smith Clark, ed. *Chief Patterns of World Drama*. Houghton Mifflin, 1946 (\$8.50); Auguste Strindberg, *Five Plays* (trans. Elizabeth Sprigge). Doubleday Anchor Books 1960 (\$1.45); Bertold Brecht, *Parables for the Theatre*, Grove (\$1.95); Federico Garcia Lorca, *Three Tragedies*. New Directions (\$1.25); Sophocles, *Sophocles I: Three Tragedies*, ed. David Grene and Richmond Lattimore, U. of Chicago Press.

COURSES OF INSTRUCTION

398. (54.) *Children's Literature*—G. R. Morisset (3-0; 3-0)
 An historical and critical study of literature written for children with attention to the interaction between children's literature and educational theory. The course will bring to the attention of prospective elementary teachers some of the world's resource in good books for children.
 Texts: *The Arbuthnot Anthology of Children's Literature* (Scott Foresman Co.).
 Prerequisite: English 240.
 [Restricted to the Faculty of Education.]

Honors Courses —

501. Seminar (1S-0; 1S-0)
 502. Seminar (1S-0; 1S-0)
 503. Seminar (1S-0; 1S-0)
 504. Tutorial (Honors)

GEOGRAPHY

Assistant Professors: I. Y. Ashwell, F. W. Boal, Dr. J. G. Nelson

- | | | | | | |
|-------------------------------------|----------------|-------|---|------|----------------|
| 201. Physical Geography | (3-2; 3-2) | Lect. | A | MWF | 9:00-9:50 |
| | | | B | MWF | 1:00-1:50 |
| | | Lab. | A | Th | 9:00-10:50 |
| | | | B | S | 8:00-9:50 |
| | | | C | M | 2:00-3:50 |
| | | | D | Tu | 2:00-3:50 |
| | | | E | W | 2:00-3:50 |
| | | | F | Th | 2:00-3:50 |
| | | | G | S | 10:00-11:50 |
| 210. World Regional Geography | (3-0; 3-0) | | | MFW | 1:00-1:50 |
| 300. Human Geography | (3-0; 3-0) | | | MWF | 2:00-2:50 |
| 301. Cartography | (6L; 6L) | | | TuTh | 2:00-4:50 |
| 302. Economic Geography | (3-0; 3-0) | | | MWF | 4:00-4:50 |
| 400. Anglo-America | (3-0; 3-0) | | | MWF | 11:00-11:50 |
| 404. Europe | (3-0; 3-0) | | | MWF | 10:00-10:50 |
| 407. Advanced Physiography | (2L-1S; 2L-1S) | | | | to be arranged |
| 410. Urban Geography | (3-0; 3-0) | | | MWF | 9:00-9:50 |
| 424. Resource Conservation | (2-1S; 2-1S) | | | | to be arranged |
| 502. Reading & Seminar | | | | | |
| 551. Research in Physical Geography | | | | | |
| 552. Research in Human Geography | | | | | |

COURSES OF INSTRUCTION

201. *Geography* (3-2; 3-2)
Physical Geography—A systematic study of the origin, nature, and distribution of the natural environment. Land forms, weather and climate, vegetation, soils, water and mineral resources will be related to each other in place. The laboratory work will complement the lectures and will include interpretation, study and preparation, of maps and charts.
Note: This is a Division C course.
210. *World Regional Geography* (3-0; 3-0)
A systematic study of the natural and cultural regions of the world.
Note: This is a Division B course.
300. *Human Geography*—J. G. Nelson (3-0; 3-0)
The significance of human distribution on the earth. Man's relation to the physical environment; world population problems; cultural patterns in the world; aspects of political and economic geography in selected world trouble areas; racial geography and urban geography. Students planning on taking this course are strongly urged to precede it by Geography 201.
Note: This course carries senior credit as a B Division option.
Text: James, *A Geography of Man*, Ginn.
301. *Cartography*—I. Y. Ashwell (6L; 6L)
Aspects of surveying, including field work with the plane table; the major projections, their construction and application to cartographic purposes; the representation of statistical data on graphs, diagrams and maps; the photogrammetric methods and the identification and interpretation of landscape features from aerial photographs; the fundamentals of drafting, lettering, map layout and reproduction.
Note: This is a C Division course.
Text: Raisz, *Principles of Cartography*, McGraw-Hill.
302. *Economic Geography* (3-0; 3-0)
A study of the distribution of economic activities over the world. Resources, industries, and trade patterns are reviewed systematically and in place.
(Text to be announced)
400. *Anglo-America* (3-0; 3-0)
The regional geography of Canada and the United States. The physical framework of these countries and its significance in their historical development; the concept of the geographic region, the pattern and characteristics of these regions, with selected detailed studies.
Prerequisite: A previous course in geography, or consent of instructor.
Text: Paterson, *North America*, Oxford.

COURSES OF INSTRUCTION

404. *Europe*—I. Y. Ashwell

An introduction to the physical and historical geography of Europe, followed by the geographical characteristics of units within the continent. Seminar time will be devoted to selected detailed studies.

Prerequisite: Consent of the instructor.

Text: Hoffman, *Europe*, Ronald Press.

407. *Advanced Physiography*—J. G. Nelson, I. Y. Ashwell (2L-1s; 2L-1s)

The study of physiographic processes in both natural and artificial (man-affected) settings. Content will range from reading on physiographic problems to field mapping and research in the local area.

Prerequisite: Consent of the instructor.

Note: This is a C Division course.

410. *Geography in Planning*

This course will cover selected historical, theoretical and practical aspects of land use planning in various parts of the world. Physical and cultural aspects of planning projects and problems will be considered; technique appraised.

Prerequisite: Consent of instructor.

412. *Latin America*

(3-0; 3-0)

A survey of the physical features of Middle and South America, followed by consideration of aboriginal peoples, settlement by the Europeans and a regional analysis of the individual countries.

Prerequisite: A course in geography, or consent of the instructor.

(Text to be announced)

(Not offered 1963-64)

424. *Resource Conservation*

(2-1s; 2-1s)

Principles of conservation and their application at the international, national and local levels. Student problems will be assigned.

Prerequisite: A previous course in Geography or consent of the Instructor.

502. Staff

Reading and Seminar Course.

551. Research in Physical Geography.

552. Research in Human Geography.

COURSES OF INSTRUCTION

GEOLOGY

Associate Professor: Dr. S. J. Nelson

Assistant Professor: Dr. T. A. Oliver

Sessional Lecturer: A. McGugan

201.	General Geology	(3-3; 3-3)	Lect.	MWF	10:00-10:50
			Lab. A	Tu	9:00-11:50
			B	Tu	2:00-4:50
			C	W	2:00-4:50
			D	Th	2:00-4:50
			E	S	9:00-11:50
232.	Introductory Geology (for Engineering Students)	(2-0; 2-0)		MW	11:00-11:50
308.	Palaeozoology	(3-0; 3-0)		MWF	11:00-11:50
309.	Geology of Canada	(3-2; 3-2)	Lect.	TuTh	10:30-12:00
			Lab.	F	2:00-3:50
351.	Mineralogy	(3-3; 3-3)	Lect.	MWF	1:00-1:50
			Lab.	M	2:00-4:50
353.	Palaeontology	(3-3; 3-3)	Lect.	MWF	8:00-8:50
			Lab.	Tu	2:00-4:50
454.	Petrology	(3-3; 3-3)	Lect.	TuTh	8:30-10:00
			Lab.	W	2:00-4:50
457.	Structural Geology	(3-3; 3-3)	Lect.	MWF	9:00-9:50
			Lab.	Th	2:00-4:50
467.	Field School			to be arranged	
609.	Geological research			to be arranged	

201. *General Geology* (3-3; 3-3)
Processes of destruction and reconstruction; interpretation of physiographic features with map study; stratigraphic column with index fossils from each period: common minerals and rocks.

Text: Gilluly et al, *Principles of Geology*

230. *Introductory Geology* (for Engineering students) (2-0; 2-0)
Text: To be announced.

308. *Palaeozoology*—S. J. Nelson (3-0; 3-0)
Elements of physical and historical geology. Discussion of the structure, classification and evolution of the major animal groups from Precambrian times to recent. Emphasis is on fossil forms, particularly those found in Western Canada. Several fossil collecting trips to the Rocky Mountains will be made early in the first term. This is designed as a general interest course for Arts and Science, and Education students and is not to be taken by students in the Geology pattern.

Note: This is a Division C subject.

Textbooks to be announced.

COURSES OF INSTRUCTION

309. *Geology of Canada*—S. J. Nelson, T. A. Oliver, P. S. Simony (3-2; 3-2)
 Geology of the physiographic provinces of Canada, including stratigraphy, structure, mineral deposits and historical geology, with emphasis on Western Canada. Rock and mineral identification; interpretation of geologic maps; palaeontology — distribution and evolution of the various animal and plant groups from Precambrian time to Recent.
 Prerequisite: Geology 201 or consent of instructor.
 Textbooks: To be announced.
Note: This is designed as a general interest course for Arts and Science and Education students, and is not to be taken by students in the Geology pattern.
351. *Mineralogy*—T. A. Oliver (3-3; 3-3)
 Principles of crystallography; physical and chemical properties of minerals.
 Textbook: Berry and Mason "*Mineralogy*".
353. *Palaeontology*—S. J. Nelson (3-3; 3-3)
 Principles of classification; comparison of fossil with modern forms; classification and study of fossil invertebrates, vertebrates and plants.
 Textbooks to be announced.
454. *Petrology*—P. S. Simony (3-3; 3-3)
 Introduction to petrography; optical properties of common rock-forming minerals; classification and genesis of igneous, sedimentary and metamorphic rocks; examination of rock sections.
 Prerequisite: Geology 351.
 Textbooks to be announced.
457. *Structural Geology* (3-3; 3-3)
 Introduction to structural geology; primary structures; non-orogenic structures; mechanical principles involved in the deformation of rocks; description, mechanics and mapping of folds, faults, joints and secondary foliation; mechanics of intrusion; regional structural geology of the earth's crust; structural interpretation of aerial photographs; problems.
 Prerequisites: Geology 201 and 351.
 Textbooks to be announced.
467. *Field School*
 A ten-day field school for third year students to be held at Cranbrook, B.C., following the Spring examination period. Topographic and geologic mapping techniques; detailed mapping of the stratigraphy and of the primary and secondary structures of a small highly deformed area.
609. *Geological Research*

COURSES OF INSTRUCTION

HISTORY

Professor: Dr. F. G. Heymann

Associate Professor: Dr. G. M. Self

Assistant Professors: J. Boudreau, Dr. R. C. Brown, Dr. R. A. M. Shields

Lecturer: Dr. J. B. Toews

200.	European History	(3-0; 3-0)	Sec. D	MWF	4:00-4:50
			Sec. A	MWF	10:00-10:50
			B	MWF	11:00-11:50
			C	TuTh	5:00-6:15
210.	Canada & United States 1492-1939	(3-0; 3-0)	Sec. A	MWF	9:00-9:50
			B	MWF	12:00-12:50
			C	TuTh	5:00-6:15
300.	Medieval Europe	(3-0; 3-0)		MWF	4:00-4:50
304.	Europe 1453-1648	(3-0; 3-0)		TuTh	5:00-6:15
307.	Europe 1789-1871	(3-0; 3-0)		MWF	3:00-3:50
309.	Europe from 1871 to the Present	(3-0; 3-0)		MW	5:00-6:15
320.	French History	(3-0; 3-0)		MWF	11:00-11:50
324.	Russia	(3-0; 3-0)		MWF	2:00-2:50
350.	Britain	(3-0; 3-0)		MWF	11:00-11:50
352.	The British Empire and Commonwealth	(3-0; 3-0)		TuTh	1:30-3:00
360.	The United States	(3-0; 3-0)		MWF	9:00-9:50
370.	Canada	(3-0; 3-0)		MWF	11:00-11:50
431.	Problems of Eastern European History	(3-0; 3-0)		to be arranged	
440.	Africa	(3-0; 3-0)		MWF	11:00-11:50
477.	History of Canadian-American Relations	(3-0; 3-0)		W	1:30-4:00
459.	Br. Imperial & Comm. Problems 1850-1949	(3-0; 3-0)		to be arranged	
525.	European Diplomatic History after 1870			to be arranged	
600.	Conference Course in Special Subjects			to be arranged	

Students will normally take one of the 200/210 courses before proceeding to senior courses. In special cases this requirement may be waived.

200. *European History* (3-0; 3-0)
The history of Europe from the decline of the Roman Empire in the West to the present.
Text: To be announced.
210. *Canada and the United States, 1492-1939* (3-0; 3-0)
A history of Canada and the United States, including a study of their European origins and relationships.
Text: To be announced.

COURSES OF INSTRUCTION

300. *Mediaeval Europe*—J. B. Toews (3-0; 3-0)
The rise and development of mediaeval institutions.
304. *Europe, 1453-1648*—F. G. Heymann (3-0; 3-0)
Europe in the Age of Renaissance and Reformation.
305. *Europe from the Peace of Westphalia to the French Revolution*
Not offered 1963/64 (3-0; 3-0)
307. *Europe, 1789-1870*—H. Mitchell (3-0; 3-0)
The absorption of the French Revolution into the complex of European ideas.
(Not offered in 1963-64)
309. *Europe, 1870 to the present*—G. M. Self (3-0; 3-0)
The immediate background of contemporary Europe.
320. *France*—H. Mitchell (3-0; 3-0)
The political and social development of France.
322. *Germany*—F. G. Heymann (3-0; 3-0)
Not offered 1963/64.
324. *Russia*—J. B. Toews (3-0; 3-0)
The political and social development of Russia, with emphasis on the period since 1861.
327. *The Balkans*—G. M. Self (3-0; 3-0)
A survey, with special emphasis on the Turkish regime and after.
(Not offered in 1963-64)
350. *Britain*—J. A. Boudreau (3-0; 3-0)
A survey of the history of the British Isles.
352. *The British Empire and the Commonwealth*—R. A. M. Shields (3-0; 3-0)
A survey of the history of the British Empire and the Commonwealth.
360. *The United States, 1492-1951*—J. A. Boudreau (3-0; 3-0)
A survey, including the colonial period.
363. *The Development of the American West*
(not offered 1963/64)
370. *Canada*—R. C. Brown (3-0; 3-0)
A survey of the political and social history of Canada.
The following 400 courses can be taken by third-year students, honors and graduate students.
The prerequisites are one freshman course (200 or 210) and one senior course or special permission by the instructor.

COURSES OF INSTRUCTION

409. *Intellectual History of Europe in the Eighteenth Century* (3-0; 3-0)
Not offered 1963/64.
420. *A selected topic from the History of France*—H. Mitchell
Not offered 1963/64.
421. *A Selected Topic from the History of Germany*—F. G. Heymann
Not offered 1963/64.
422. *The Social Thought of the 19th Century*
Not offered 1963/64.
431. *Problems of Eastern European History*—F. G. Heymann (3-0; 3-0)
Poland, Czechoslovakia and Hungary and their position between the great powers.
440. *Africa*—G. M. Self (3-0; 3-0)
A survey, with special reference to European penetration and African reactions.
452. *History of Tudor and Stuart England*
Not offered 1963/64.
454. *Nineteenth Century Britain*—R. A. Shields (3-0; 3-0)
459. *British Imperial and Commonwealth Problems 1850-1949*—R. A. M. Shields (3-0; 3-0)
462. *Intellectual History of the United States*—R. C. Brown (3-0; 3-0)
Not offered 1963/64.
464. *History of American Foreign Relations*
Not offered 1963/64.
473. *A Selected Topic in Canadian History*
Not offered 1963/64.
475. *History of the Canadian West*—J. R. Boudreau
Not offered 1963/64.
477. *History of Canadian-American Relations*—R. C. Brown (3-0; 3-0)

Honors and Graduate Courses

500. *Special Subject*—Third Year History Honors
and

COURSES OF INSTRUCTION

501. *Special Subject*—Fourth Year, Honors History
Not later than the beginning of his third year the Honors student, in consultation with the Department, will select a special subject to be studied under the guidance of a member of the department for the ensuing two years. He will have weekly conferences with his instructor and will be assigned written work, including a minor thesis, utilizing primary source materials. Special subjects are offered by most members of the department.
600. *Conference Course in Special Subjects*
Open to graduate students.
625. *European Diplomatic History after 1870*—Members of the Department
Open to graduate students and honors students with sufficient knowledge of languages.

MATHEMATICS

Head: J. E. L. Peck

Associate Professors: Dr. A. A. Gibb, Dr. P. Lancaster, Dr. A. Sharma

Assistant Professors: Dr. N. Nobusawa, Dr. J. Schaer, Dr. M. Shimrat,
Lecturer: A. S. B. Holland

Sessional Lecturers: R. L. Forbes, Miss H. Gray, C. Nehra

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|--|------------|--------|---------|-------------|-------------|
| 111. Trigonometry | (2-0; 0-0) | 1 | Sec. A | TuTh | 11:00-11:50 |
| | | 1 | B | TuTh | 9:00-9:50 |
| | | 1 | C | TuTh | 1:00-1:50 |
| | | 1 | D | TuTh | 2:00-2:50 |
| 202. Mathematics for Engineering Students
(as Mathematics 211) | (5-0; 5-0) | | | | |
| 202/211 Elementary Mathematics | (5-0; 5-0) | | Sec. A1 | MTuWThF | 8:00-8:50 |
| | | | A2 | MTuWThF | 8:00-8:50 |
| | | | A3 | MTuWThF | 8:00-8:50 |
| | | | A4 | MTuWThF | 8:00-8:50 |
| | | | A5 | MTuWThF | 8:00-8:50 |
| | | | A6 | MTuWThF | 8:00-8:50 |
| | | | Sec. B1 | MTuWThF | 1:00-1:50 |
| | | | B2 | MTuWThF | 1:00-1:50 |
| | | | B3 | MTuWThF | 1:00-1:50 |
| | | | B4 | MTuWThF | 1:00-1:50 |
| | | | B5 | MTuWThF | 1:00-1:50 |
| | | | B6 | MTuWThF | 1:00-1:50 |
| | | | Sec. C1 | MTuWThF | 10:00-10:50 |
| | | | C2 | MTuWThF | 10:00-10:50 |
| | | | C3 | MTuWThF | 10:00-10:50 |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 50%;"> <p>These sections are for students)
who cannot fit the other sections)
into their timetables due to)
conflicts in course selection)</p> </div> <div style="width: 45%;"> <p>Sec. A1 MTuWThF 8:00-8:50</p> <p>Sec. A2 MTuWThF 8:00-8:50</p> <p>Sec. A3 MTuWThF 8:00-8:50</p> <p>Sec. A4 MTuWThF 8:00-8:50</p> <p>Sec. A5 MTuWThF 8:00-8:50</p> <p>Sec. A6 MTuWThF 8:00-8:50</p> <p>Sec. B1 MTuWThF 1:00-1:50</p> <p>Sec. B2 MTuWThF 1:00-1:50</p> <p>Sec. B3 MTuWThF 1:00-1:50</p> <p>Sec. B4 MTuWThF 1:00-1:50</p> <p>Sec. B5 MTuWThF 1:00-1:50</p> <p>Sec. B6 MTuWThF 1:00-1:50</p> <p>Sec. C1 MTuWThF 10:00-10:50</p> <p>Sec. C2 MTuWThF 10:00-10:50</p> <p>Sec. C3 MTuWThF 10:00-10:50</p> </div> </div> | | | | | |
| 217. Calculus (Honors) | (5-0; 5-0) | | | MTuWThF | 1:00-1:50 |
| 281. Algebra | (3-0; 3-0) | Sec. A | MWF | 10:00-10:50 | 10:00-10:50 |
| | | B | TuThS | 10:00-10:50 | 10:00-10:50 |
| | | C | MWF | 2:00-2:50 | 2:00-2:50 |

COURSES OF INSTRUCTION

283.	Algebra & Geometry (Honors)	(3-0; 3-0)		MWF	10:00-10:50
303.	Calculus	(5-0; 5-0)	Sec. A B	MTuWThF MTuWThF	10:00-10:50 9:00-9:50
315.	Calculus & Analytic Geometry	(5-0; 5-0)	Sec. A Sec. B	MTuWThF MTuWThF	8:00-8:50 10:00-10:50
317.	Calculus & Analytic Geometry & Linear Algebra	(5-0; 5-0)		MTuWThF	1:00-1:50
321.	Elementary Mechanics	(3-0; 3-0)		MWF	11:00-11:50
341.	Elementary Mathematics from an Advanced Viewpoint	(3-0; 3-0)		MWF	2:00-2:50
371.	Geometry	(3-0; 3-0)		MWF	9:00-9:50
415.	Advanced Calculus	(3-0; 3-0)		MWF	1:00-1:50
431.	Differential Equations	(2-0; 2-0)		TuTh	9:00-9:50
433.	Advanced Calculus	(2-0; 2-0)		TuTh	11:00-11:50
435.	Modern Algebra	(2-0; 2-0)		TuTh	10:00-10:50
441.	Advanced Mechanics (as Physics 441)	(3-0; 3-0)		MWF	8:00-8:50
471.	Numerical Analysis	(2-3; 2-3)	Lect. Lab.	WF M	11:00-11:50 9:00-11:50
552.	Quantum Theory				
604.	Measure Theory	(3-0; 3-0)			
630.	Topology	(3-0; 3-0)			
690.	Advanced Field Theory	(3-0; 3-0)			

111. *Trigonometry* (2-0; 0-0)
 Trigonometric functions and identities. Solution of triangles.
 Prerequisite: 70% standing in Mathematics 30 and 70% standing in
 the required courses of Grade XII, or special permission of the
 Dean.

Note: This course does not carry credit towards a degree, except in
 combination with 211.

202. *Elementary Mathematics* (for Engineering students) (3-2; 3-2)
 As for Mathematics 211 (formerly 201)
 Text: To be announced.

211. (formerly 201) *Elementary Mathematics* (5-2; 5-2)
 Trigonometrical identities and equations. Rates of change. Dif-
 ferentiation and integration of simple functions. Applications. Ana-
 lytic geometry of the conic sections. Exponential, logarithmic and
 trigonometric functions.

Text: Johnson and Kiokemeister, *Calculus with Analytic Geometry*
 (Allyn and Bacon), chapters 1-11.

Prerequisite: Mathematics 30 and 31.

217. *Calculus* (5-0; 5-0)
 Functions. The derivative, differential and anti-differential. The integral and its applications. Fundamental Theorem. Differentiation and integration of elementary functions of one or more variables. Simple differential equations.
 Prerequisite: Mathematics 30 and 31.
Note: This course is required for first-year Honours students in Mathematics and Physics. Other students are admitted only with the consent of the instructor.
281. (formerly 270) *Algebra* (3-0; 3-0)
 Number system, induction scales of notation. Algebra of logic and sets. Permutations and combinations, binomial and multinomial theorems.
 Probability. Matrices and linear transformations.
 Prerequisite: Mathematics 30.
283. (formerly 271) *Algebra and Geometry* (Honours) (3-0; 3-0)
 Sets. Mathematical logic. Number systems. Co-ordinates. Mathematical induction. Binomial theorem. Remainder theorem. Lines and planes in analytic geometry. Vectors. Linear transformations and matrices. Groups of transformations of co-ordinates. Geometric invariants. Determinants. Conic sections. Principal axis theorems.
 Prerequisite: Mathematics 30 and 31.
Note: This course is required for first-year Honours students in Mathematics and Physics. Other students admitted only with the consent of the Instructor.
303. *Calculus and Analytical Geometry* (for Engineering students) (5-0; 5-0)
 Polar co-ordinates. Methods and applications of integration. Series. Elements of partial differentiation. Multiple integration. Elements of differential equations.
 Prerequisite: Mathematics 202.
 Textbook: Adams and White, *Analytic Geometry and Calculus* (Oxford).
315. (formerly 304) *Calculus and Analytical Geometry* (5-0; 5-0)
 Polar and parametric co-ordinates. Methods and applications of integration. Series. Vectors and space geometry. Partial differentiation. Complex numbers. Determinants. Multiple integrals. Elements of differential equations.
 Prerequisite: Mathematics 211 or 211 and 111 (formerly 200 or 201).
 Textbook: Johnson and Kiokemeister, *Calculus with Analytic Geometry* (Allyn and Bacon).

COURSES OF INSTRUCTION

317. (formerly 306) *Calculus, Analytical Geometry and Linear Algebra* (5-0; 5-0)
Polar and parametric co-ordinates. Methods and applications of integration. Series. Vectors and space geometry. Partial differentiation. Multiple integration. Complex numbers. Elements of differential equations. (These topics treated with somewhat more attention to rigour than in Mathematics 304.) Introduction to linear algebra, including matrices, determinants and vector spaces.
Prerequisite: Mathematics 211 or 211 and 111 (formerly 200 or 201).
Prerequisite or corequisite: Mathematics 281 (formerly 270).
Textbooks: Johnson and Kiokemeister, *Calculus with Analytic Geometry* (Allyn and Bacon); Murdoch, *Linear Algebra for Undergraduates* (Wiley).
Note: This course is required for second year Honors students in Mathematics and Physics. Other students admitted only with the consent of the instructor.
321. (formerly 310) *Elementary Mechanics* (3-0; 3-0)
Newton's Laws. Plane statics. Systems of forces. Centre of mass. Friction. Principles of virtual work. Thin beams. Plane kinematics and dynamics of a particle. Projectile motion. Circular motion and simple harmonic motion. The conservation laws. Stability of equilibrium. Plane motion of a rigid body. Impulsive motion.
Prerequisite: Mathematics 211 or 211 and 111 (formerly 200 or 201).
Corequisite: Mathematics 315 or 317 (formerly 304 or 306).
Textbook: J. L. Synge and B. A. Griffiths, *Principles of Mechanics*, (third ed.) (McGraw Hill).
341. (formerly 330) *Elementary Mathematics from an Advanced View-point* (3-0; 3-0)
Topics from ordinary high school algebra and geometry will be treated from the unifying point of view of more modern concepts such as function, set, group, symbolic logic, the axiomatic method, and the development of a number system.
Prerequisite: Mathematics 30 and 31.
Note: This course is designed primarily for teachers of high school mathematics.
371. (formerly 360) *Geometry* (3-0; 3-0)
Various elementary concepts of space, such as euclidean, affine, projective, non-euclidean, and topological spaces; axiomatic treatment of models; relation to group theory.
Prerequisite or corequisite: Mathematics 315.
415. (formerly 404) *Advanced Calculus* (3-0; 3-0)
Vector analysis. Ordinary differential equations. Series solutions of differential equations. Gamma, Bessel and Legendre functions. Fourier series. Boundary value problems.
Prerequisite: Mathematics 315 (formerly 304).
431. (formerly 421) *Differential Equations* (2-0; 2-0)
Standard forms. The general linear equation. Laplace transforms. Systems of equations. Bessel and Legendre equations. Some partial differential equations. Fourier series.
(For Honors students in Mathematics and Physics).
Prerequisite: Mathematics 317 or 315 or 303.
433. (formerly 422) *Advanced Calculus* (2-0; 2-0)
Series. Uniform convergence. Functions of two or more variables. Vector analysis. Line and surface integrals. Multiple integrals.
Prerequisite: Mathematics 317 or 315 or 303.
(For Honors students in Mathematics and Physics).

COURSES OF INSTRUCTION

435. (formerly 425) *Modern Algebra* (2-0; 2-0)
Integral domains. Congruences. Fields. Real numbers. Polynomials. Complex numbers. Groups. Vector spaces. Matrix algebra. Linear groups.
Prerequisites: Mathematics 281 and 317 or equivalent.
441. (formerly 430) *Advanced Mechanics* (3-0; 3-0)
Central orbits. Scattering theory. Harmonic oscillator. Normal modes of vibrations. Space motion of a rigid body. Relative motion. Tops and gyroscopes. D'Alembert's principle. Generalized coordinates. Lagrange's equations. Hamilton's principle.
Prerequisites: Mathematics 303 or 315 or 317, and a course in elementary statics and dynamics.
471. (formerly 460) *Numerical Analysis* (2-3; 2-3)
Matrix methods for linear algebraic equations of moderate order. Determination of eigenvalues and eigenvectors of matrices. Solution of algebraic and transcendental equations. Interpolation, tabulation, and economization. Algebra of operators. Numerical differentiation and integration. Numerical solution of ordinary differential equations and integral equations.
Prerequisites or corequisites: Mathematics 315 and one of 281 or Statistics 265, or equivalent.
510. *Modern Algebra*—N. Nobusawa.
630. *Topology*—M. Shimrat (3-0; 3-0)
671. *Topics in Analysis*—A. Sharma

MODERN LANGUAGES

Associate Professor: Dr. J. E. Oyler

Assistant Professors: Dr. D. Bresky, Dr. R. Breugelmans, Mr. A. A.

Greaves, Dr. A. Harms, Dr. F. Jensen, Mr. I. C. E. Luethy

Lecturer: Mr. S. I. Zaitzeff

FRENCH

200. First Year University French (3-1; 3-1) Lect. A MWF 9:00-9:50
B MWF 9:00-9:50
C MWF 11:00-11:50
D TuThS 9:00-9:50
E MWF 10:00-10:50
F MWF 10:00-10:50
G MWF 12:00-12:50
H MWF 12:00-12:50
I MWF 5:00-5:50
J MWF 5:00-5:50
Lab. A M 8:00-8:50
B Tu 8:00-8:50
C W 8:00-8:50
D Th 8:00-8:50
E F 8:00-8:50
F Tu 9:00-9:50
G Th 9:00-9:50
H Tu 10:00-10:50
I Tu 5:00-5:50
J Th 5:00-5:50
330. French Language & Civilization (3-0; 3-0) Sec. A MWF 11:00-11:50
B TuTh 5:00-6:15

COURSES OF INSTRUCTION

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|------|--|------------|-------------|-------------|------------------------|
| 350. | Second Year French Authors & Grammar | (3-0; 3-0) | Sec. B
A | TuTh
MWF | 5:00-6:15
4:00-4:50 |
| 375. | Realism | (3-0; 3-0) | | MWF | 3:00-3:50 |
| 399. | Romance Philology | (3-0; 3-0) | | MWF | 11:00-11:50 |
| 400. | Seventeenth Century | (3-0; 3-0) | | MWF | 9:00-9:50 |
| 450. | Contemporary French Authors | (3-0; 3-0) | | MW | 5:00-6:15 |
| 502. | Practical Study of the French Language | (0-1; 0-1) | | | |
| 503. | Practical Study of the French Language | (0-1; 0-1) | | | |
| 200. | <i>First Year University French</i> | (3-1; 3-1) | | | |
| | This is an intensive course in reading modern French, French grammar and composition.
Prerequisite: French 30.
Text: To be announced.
Note: Certain Senior Courses will be offered in alternate years. | | | | |
| 330. | <i>French Language and Civilization: Staff</i> | (3-0; 3-0) | | | |
| | Pronunciation: sounds of the French language; the International Phonetic Alphabet; drill in basic speech patterns.
Grammar: a general review with emphasis on those constructions in which French usage differs from English; translation from French to English and from English to French.
Civilization: aspects of contemporary French life and letters; specimens of post-war prose and verse.
Prerequisite: French 200.
Note: This course, designed for teachers and prospective teachers, will not overlap, or serve as a substitute for, Education CI 263.
Texts: To be announced. | | | | |
| 350. | <i>Second Year French Authors and Grammar: Staff</i> | (3-0; 3-0) | | | |
| | The study of representative literary works from the Middle Ages to the present day; oral and composition work based on the texts studied. The principal authors are Villon, Ronsard, Molière, Voltaire, Baudelaire, Maupassant and Camus. An intermediate course.
Prerequisites: French 200 or a first-class mark in French 100.
Texts: To be announced. | | | | |
| 360. | <i>Eighteenth Century: F. Jensen</i> | (3-0; 3-0) | | | |
| | A study of the literature and the evolution of ideas in the eighteenth century: Fontenelle, Marivaux, Montesquieu, Voltaire, Diderot, Rousseau, Beaumarchais.
(Not offered 1963-64) | | | | |
| 370. | <i>Romantic Period: A. Harms</i> | (3-0; 3-0) | | | |
| | A study of the sources and history of French romanticism: Mme. de Staël, Chateaubriand, Lamartine, Hugo, Musset, Vigny.
(Not offered 1963-64) | | | | |
| 375. | <i>Realism: A. Harms</i> | (3-0; 3-0) | | | |
| | This course deals with definition and history of realism, the development of the novel: Stendhal, Merimée, Balzac and Flaubert, and the poetry of Baudelaire.
Texts to be announced. | | | | |

COURSES OF INSTRUCTION

380. *Prose and Poetry of the Late Nineteenth Century*: D. Bresky (3-0; 3-0)
 A study of naturalism in the novel and of the Parnassian and Symbolist schools of poetry.
 (Not offered 1963-64)
399. *Romance Philology*: F. Jensen (3-0; 3-0)
 An outline of the development of Vulgar Latin into Old French and Modern French. The main differences between French and Provençal, Italian and Spanish will be shown in connection with the study of phonology, morphology and syntax in the different stages of the development.
 Texts to be announced.
400. *Seventeenth Century*: A. A. Greaves (3-0; 3-0)
 This course consists of a study of the literature and society of the seventeenth century in France. The classical theatre: Corneille, Molière, Racine; the novel; Descartes; Pascal; La Rochefoucauld and La Bruyère; La Fontaine.
 Prerequisite: One senior French course.
 Texts to be announced.
450. *Contemporary French Authors*: D. Bresky (3-0; 3-0)
 Texts to be announced.
502. *Practical Study of the French Language* (0-1; 0-1)
 Second year Honors laboratory hour.
503. *Practical Study of the French Language* (0-1; 0-1)
 Third year Honors laboratory hour.
510. *Seminar in French Composition* (3-0; 3-0)
 For fourth year Honors and Graduate students. An intensive training in the preparation and oral presentation of reports in French.

GERMAN

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|------|--|------------|---------|----------------|-------------|
| 100. | Beginners German | (3-2; 3-2) | Lect. A | MWF | 2:00-2:50 |
| | | | B | MWF | 11:00-11:50 |
| | | | Lab. A | TuTh | 11:00-11:50 |
| | | | B | TuTh | 2:00-2:50 |
| 200. | First Year University German | (3-1; 3-1) | Lect. | MWF | 12:00-12:50 |
| | | | Lab. | Th | 3:00-3:50 |
| 210. | Scientific German | (3-0; 3-0) | | MWF | 1:00-1:50 |
| 350. | Survey of German Literature | (3-0; 3-0) | | MWF | 9:00-9:50 |
| 380. | The Age of Goethe | (3-0; 3-0) | | MWF | 2:00-2:50 |
| 390. | History of the German Language | (3-0; 3-0) | | to be arranged | |
| 400. | German Literature of the 19th Century | (3-0; 3-0) | | MWF | 11:00-11:50 |
| 450. | Modern German Literature | (3-0; 3-0) | | to be arranged | |
| 502. | Practical Study of the German Language | (0-1; 0-1) | | | |
| 503. | Practical Study of the German Language | (0-1; 0-1) | | | |

COURSES OF INSTRUCTION

510. *Advanced German Composition & Conversation* (2-0; 2-0) to be arranged
100. *Beginners' German* (3-2; 3-2)
This course is designed to impart, on the introductory level, an active, practical skill in the use of the spoken and written word. The oral approach will be stressed, using material from every-day situations, easy cultural readers, slides, maps, etc. The Department's language laboratory will be used for drill purposes and will be available to students for individual practice.
200. *First Year University German* (3-1; 3-1)
This course is devoted to the development of the student's ability in speaking, reading and writing German, using modern short stories, cultural readers and visual aids.
Prerequisite: German 30.
Text: To be announced.
Note: Certain Senior Courses to be offered in alternate years.
210. *Scientific German*—J. Oyler (3-0; 3-0)
This course will cover the elements of German grammar. It aims to give students a reading knowledge of easy scientific German. It is especially designed to meet the needs of honors students from science departments, students of the professional faculties and graduate students who require a knowledge of scientific German.
Texts to be announced.
350. *Survey of German Literature*—Staff (3-0; 3-0)
A general survey, a study of selected periods and of major works of German literature. A review of grammar, oral and composition work.
Prerequisite: German 200 or the consent of the Department.
Texts to be announced.
370. *German Literature of the Eighteenth Century* (3-0; 3-0)
A study of the historical and cultural background of the eighteenth century, of Rationalism, Sturm and Drang, Classicism, and the beginnings of Romanticism. Foreign influences on German Literature. Lectures, discussions and reports will be based on selected works of Lessing, Goethe and Schiller. Composition and oral work.
Prerequisite: German 200, or consent of the Department.
(Not offered 1963-64)
380. *The Age of Goethe*—R. Breugelmans (3-0; 3-0)
A study of the life and thought of Goethe and his contemporaries, as reflected in their works. Lectures, discussions and reports; composition and oral work.
Prerequisite: German 200 or consent of the Department.
Texts to be announced.
390. *History of the German Language*—J. Oyler (3-0; 3-0)
An historical survey of the major periods of the German language. Foreign influences on German style and vocabulary. The relationships between language, history and literature.
Prerequisite: One senior German course or consent of the Department.
Texts to be announced.

COURSES OF INSTRUCTION

400. *German Literature of the Nineteenth Century* (3-0; 3-0)
 This course consists of a study of the leading exponents of nineteenth century drama, fiction and poetry, including the background of Romanticism, of the Young Germany Movement, of Realism, and of Naturalism. A careful study is made of the characteristic qualities of the writers and their contributions to German literature. Lectures, discussions and individual reports.
 Prerequisites: One senior German course or consent of the Department.
 Texts to be announced.
450. *Modern German Literature*—R. Breugelmans (3-0; 3-0)
 The purpose of this course is to trace the important literary movements since Naturalism, using a number of representative authors of each period. Reading and interpretation of outstanding dramas, novels, short stories and poems. Lectures, discussions and individual reports.
 Prerequisite: One senior German course or consent of the Department.
 Texts to be announced.
502. *Practical Study of the German Language* (0-1; 0-1)
 Second year honors laboratory hour.
503. *Practical Study of the German Language* (0-1; 0-1)
 Third year honors laboratory hour.
504. *Practical Study of the German Language* (0-1; 0-1)
 Fourth year honors laboratory hour.
 (Not offered 1963-64)
510. *Advanced German Composition and Conversation* (2-0; 2-0)
 The course is designed to enable students to read the German language fluently and intelligently, to write it correctly and idiomatically, to understand it as a spoken language and to speak it with facility. The work consists of conversation and exercises in composition relating to topics of general interest; reading of difficult literary material; discussion of problems of German grammar; drill in pronunciation and intonation; building of the German vocabulary. Required of all students taking honors and majoring in German.
 Texts to be announced.
530. *German Medieval Literature and Philology*—J. Oyler (3-0; 3-0)
 Prerequisites: Two Senior German courses.
 (Not offered 1963-64)

LINGUISTICS

400. *General Linguistics* (3-0; 3-0) MWF 3:00-3:50
 An introduction to and a survey of the field of language and languages dealing with the fundamentals of structural and historical linguistics. Topics discussed include language families, types of languages, linguistic change, linguistic structure. Emphasis will be placed on modern European languages. Required of students reading for Honors in Modern Languages or French and Latin.

SPANISH

100. *Beginners' Spanish* (3-2; 3-2) Lect. MWF 2:00-2:50
 Lab. TuTh 1:00-1:50

COURSES OF INSTRUCTION

MUSIC

Associate Professor: Dr. F. E. Churchley
 Assistant Professors: Q. D. Doolittle, Dr. S. G. Finn
 Sessional Instructor: T. Herz

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|------|--|--------------|--------------------|--------------------------|
| 100. | An Introduction to Concert Music | (3-0; 3-0) | MWF | 3:00-3:50 |
| 200. | History of Music & Choral Technique | (2-3; 2-3) | Lect. TuTh
TuTh | 10:00-10:50
1:00-1:50 |
| | Listening Lab. to be arranged | | | |
| 203. | (Students in the first year Bachelor of Music program only) | (2-6; 2-6) | to be arranged | |
| 215. | Second Practical Subject | | to be arranged | |
| 225. | First Practical Subject | | to be arranged | |
| 250. | Elementary Harmony & Counterpoint | (2-3; 2-3) | MTuWThF | 2:00-2:50 |
| 303. | History of Music & Instrumental Technique | (2-6; 2-6) | | |
| 315. | Second Practical Subject (B.Mus. program) | (1-6; 1-6) | | |
| 325. | First Practical Subject (B.Mus. program) | (2-10; 2-10) | | |
| 350. | Harmony & Counterpoint | (2-3; 2-3) | | |
| 353. | Harmony, Counterpoint and Orchestration | (2-4; 2-4) | | |
| 400. | History of Music & Instrumental Technique | (2-5; 2-5) | | |
| 100. | <i>An Introduction to Concert Music</i> (3-0; 3-0) | | | |
| | An elementary course in the history and appreciation of concert music. Composers, styles and musical forms of the standard repertory will be studied. Attendance at prescribed concerts and rehearsals will be arranged. | | | |
| | No prerequisites. | | | |
| | Music 100 will not be accepted as a prerequisite for Music 200. | | | |
| 200. | <i>History of Music and Choral Technique</i> (2-3*; 2-3*) | | | |
| | Elementary theory and practice of singing, choral technique and interpretation, sight singing and ear training. History of music. Introduction to form. Instruments of the orchestra. Assignments include one hour weekly of prescribed listening; records and scores are provided and the listening room is reserved at various times for small groups. Weekly reading will be assigned, part of it related to the listening. | | | |
| | Theory: The student will be required in February (of the session in which the course is taken), to pass an elementary examination in notation with 80% standing. | | | |
| | Texts: Staton, <i>Sweet Singing in the Choir</i> ; Martin Bernstein, <i>An Introduction to Music</i> ; Horwood, <i>Basis of Music</i> . | | | |
| | *Laboratory: Choral and listening. | | | |
| | Prerequisite: (a) Western Board of Music Grade III Theory or equivalent; and (b) Western Board of Music Grade V Practical or equivalent. | | | |

COURSES OF INSTRUCTION

203. *History of Music, Choral and Instrumental Technique* (2-6; 2-6)
Required of students in the first year of the B.Mus. program and open only to those students. The same content as Music 200 with the addition of a laboratory in the principles and practice of woodwind instruments.
225. *1st Practical Subject* (2-10; 2-10)
This course is required in the 1st year of the B.Mus. program.
215. *2nd Practical Subject* (1-6; 1-6)
This course is required in the 1st year of the B.Mus. program.
250. *Elementary Harmony and Counterpoint* (2-3; 2-3)
Counterpoint up to three parts.
Diatonic harmony, including secondary sevenths. Modulation. Use of unessential notes of all kinds. Harmonizing of chorales in the style of Bach. Form; Ear training and Keyboard Harmony.
300. *History of Music and Instrumental Technique*—Q. D. Doolittle (2-6; 2-6)
A study of the history of music from the year 1600 to 1900. Scores and records of music are provided. A critical evaluation of the styles of various composers is emphasized. The laboratory consists of the study of *brass and woodwind instruments* as applied to band and orchestral groups.
Prerequisites: Music 200 or equivalent.
(Not offered in 1963-64)
303. *History of Music and Instrumental Technique*—Q. D. Doolittle (2-6; 2-6)
Required of students in the second year of the Bachelor of Music program, and open only to those students. The same content as Music 300 except that the instrumental laboratory is limited to stringed instruments.
Prerequisite: Music 203.
(Not offered in 1963-64)
315. *Second Practical Subject*—Staff (1-6; 1-6)
Required in the second year of the B.Mus. program.
325. *First Practical Subject*—F. E. Churchley (2-10; 2-10)
Required in the second year of the B.Mus. program.
350. *Harmony and Counterpoint*—S. G. Finn (2-3; 2-3)
Counterpoint in three parts. Invertible counterpoint, canon and fugal exposition.
Chromatic harmony in four parts. Harmonic analysis; Ear Training and Keyboard Harmony.
Prerequisite: Music 250.
Textbooks: Reed, H. O., *Basic Music*; Reed, H. O., *Basic Music Workbook*; Kennan, Kent, *Counterpoint*.
353. *Harmony, Counterpoint and Orchestration*—S. G. Finn (2-4; 2-4)
Open only to students in the second year of the Bachelor of Music program. The same content as Music 350 with the addition of a laboratory in orchestration.
Prerequisite: Music 250.
Textbooks: Same as Music 350.
400. *History of Music and Instrumental Technique*—Q. D. Doolittle (2-5; 2-5)
Styles and techniques of composers from Debussy to the present. The laboratory includes the study of stringed instruments as applied to orchestral groups.
Prerequisite: Music 300 or equivalent.
Textbooks: Grout, D. J., *A History of Western Music*; Machlis, *Introduction to Contemporary Music*.

COURSES OF INSTRUCTION

NURSING

- N. Ed. 231 *Orientation to Nursing* (0-0; 2-0)
 A series of discussions designed to give the beginning student a general concept of the field of nursing and the responsibilities and obligations of the individual who chooses this profession.

PHILOSOPHY

Head: T. M. Penelhum

Professor: A. D. Winspear

Associate Professor: R. N. Anderson, Faculty of Education

Assistant Professors: J. Heintz, P. S. Mamo

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|------|------------------------------------|------------|------------------------|-------------|
| 241. | Introduction to Western Philosophy | (3-1; 3-1) | Lect. MWF | 3:00-3:50 |
| | | | Seminar to be arranged | |
| 342. | Descartes to Kant | (3-0; 3-0) | MWF | 4:00-4:50 |
| 341. | Ancient Philosophy | (3-0; 3-0) | TuTh | 8:30-10:00 |
| 345. | Contemporary Philosophy | (3-0; 3-0) | TuTh | 1:00-2:30 |
| 354. | Ethics | (3-0; 3-0) | MWF | 9:00-9:50 |
| 358. | Philosophy of Religion | (3-0; 3-0) | MWF | 11:00-11:50 |
| 360. | Symbolic Logic | (3-0; 3-0) | TuTh | 10:30-12:00 |
| 566. | Theory of Knowledge | (3-0; 3-0) | TuTh | 3:00-4:30 |
241. (formerly 240) *Introduction to Western Philosophy* (3-1; 3-1)
 The student meets and considers traditional problems of Western philosophy as they appear in selected philosophical classics. Emphasis is placed both on historical treatment of these problems and upon the student's ability to handle philosophical ideas independently. To this end lectures, discussions and tutorials form part of the student's training.
261. (formerly 260) *Introduction to Logic and Semantics* (3-0; 3-0)
 This course aims at developing a sensitivity to the structure and use of arguments and language. Students are introduced to the techniques of modern symbolic logic and informal linguistic analysis as methods for evaluating beliefs and arguments.
 (Not offered in 1963-64)
341. *Ancient Philosophy*—P. S. Mamo (3-0; 3-0)
 A study of the main writings of ancient philosophy from Thales to Plotinus.
342. *Philosophy from Descartes to Kant*—S. Munsat (3-0; (3-0)
 Prerequisite: Philosophy 240 or 241.
343. *Medieval Philosophy* (3-0; 3-0)
 A study of representative philosophical writings from St. Augustine to Nicolas of Cusa. Emphasis is placed on the thought of St. Thomas Aquinas, William of Ockham and Duns Scotus.
 (Not offered in 1963-64)
345. *Contemporary Philosophy*—J. Heintz (3-0; 3-0)
 A discussion of the main currents of present-day philosophical thought as expressed in selected contemporary writings.
 Prerequisite: A previous course in philosophy or consent of instructor.

COURSES OF INSTRUCTION

346. *Religion in Classical Times*—A. D. Winspear (3-0; 3-0)
Lectures will be given on the totemic background of ancient religion, Matriarchy, the Homeric Pantheon, the Chthonic deities, the Mystery Religious Experiments of the Roman People.
References: Guthrie, *The Greeks and Their Gods*; Warde Fowler, *The Religious Experiments of the Roman People*.
(Not offered in 1963-64)
354. *Ethics*—P. S. Mamo (3-0; 3-0)
An inquiry into the nature and justification of moral standards.
358. *Philosophy of Religion*—T. M. Penelhum (3-0; 3-0)
A philosophical examination of the fundamental concepts of religious thinking.
Prerequisite: A previous course in philosophy, or consent of instructor.
360. *Symbolic Logic*—J. Heintz (3-0; 3-0)
This course treats the following topics: inference and argument; validity and consistency; the sentential calculus; the predicate calculus; the calculus of identity; the theory of descriptions; formalization of logic and the axiomatic method; syntax and semantics; the deduction theorem; the Post and Hilbert-Ackermann consistency proofs; concepts of independence and completeness of a formal system; elementary theory of sets (classes); Boolean algebra and existence-free logics.
Prerequisite: A previous course in Philosophy, or consent of instructor.
462. *Philosophy of Science* (3-0; 3-0)
An enquiry into the methods and techniques of science.
Prerequisite: Philosophy 260 or consent of instructor.
(Not offered 1963-64)
566. *Theory of Knowledge*—S. Munsat (3-0; 3-0)

PHYSICAL EDUCATION

Head: Professor, Dr. L. Goodwin

Assistant Professors: J. Dewar, Mary P. Hendrickson,* D. deF. MacIntosh

Lecturer: R. D. Bratton

Instructor: Shirley A. Duquette

Sessional Instructor: Mrs. E. Kueber

200.	P.E. for Elementary Schools	(3-0; 3-0)	M	3:00-3:50
			WF	3:00-3:50
			M	4:00-4:50
			WF	4:00-4:50
205	Soccer & Volleyball (see 232)	1	MWF	1:00-1:50
207.	Games of Low Organization & Rhythmics (see 232)	2	MWF	1:00-1:50
211.	Tumbling & Apparatus (see 336)	(0-0; 0-3) 2	MWF	2:00-3:00
218.	MEN—Recreational Activities (for Engineering students)	(2-0; 2-0)	Sec. A, B	MTh 9:00-9:50
	(for Engineering students plus 30 others)		C	MW 10:00-10:50
			D	MF 11:00-11:50
			E	TuTh 11:00-11:50
			F	TuTh 1:00-1:50
			G	TuTh 3:00-3:50
			H	MW 4:00-4:50
			J	TuTh 4:00-4:50

COURSES OF INSTRUCTION

228.	WOMEN—Recreational Activities	(2-0; 2-0)		Sec. A B C D E F	TuTh WF TuTh W F TuTh MW	8:00-8:50 9:00-9:50 10:00-10:50 11:00-11:50 10:00-10:50 2:00-2:50 3:00-3:50
215.	Aquatics (see 446)	(0-3; 0-0)	1		Tu	8:00-11:00
232.	Curriculum & Instruction (Secondary)	(3-3; 3-3)				
	This course is comprised of the following four one-quarter courses:					
205	Soccer & Volleyball		1			
207.	Games of Low Organ. & Rhythmics		2			
243.	Introduction to Physical Education		1			
305.	Basketball		2			
243.	Introduction to Physical Education (see 232)	(3-0; 0-0)	1		MWF	8:00-8:50
305.	Basketball (see 232)	(0-0; 0-3)	2		MWF	8:00-8:50
307.	Folk & Social Dancing (see 336)	(0-3; 0-0)	1		MWF	1:00-1:50
311.	Tumbling & Apparatus (see 446)	(0-0; 0-3)	1		MWF	8:00-8:50
327.	International Folk Dance	(0-3; 0-0)	1		MWF	2:00-2:50
329.	Theory of Play	(0-0; 0-3)	2		MWF	2:00-2:50
336.	Curriculum & Instruction	(3-0; 3-3)				
	This course is comprised of the following four one-quarter courses:					
211.	Tumbling & Apparatus		2			
307.	Folk & Social Dancing		1			
401.	Track & Field		1			
407.	Football		2			
337.	P.E. Curriculum & Instruction (Elementary)	(1-2; 0-0)		Sec. A B C	TuTh TuTh TuTh	8:00-8:50 9:00-9:50 10:00-10:50
401.	Track & Field (see 336)	(0-3; 0-0)	1		MWF	2:00-2:50
403.	Skiing, Badminton & Curling (see 446)	(0-0; 0-3)	2		Tu	8:00-10:50
405.	Hockey & Wrestling (see 446)	(0-0; 0-3)	2		MWF	8:00-8:50
407.	Football (see 336)	(0-0; 0-3)	2		MWF	1:00-1:50
442.	Organization and Administration of Health and Physical Education	(3-0; 3-0)			TuTh	2:00-3:30

COURSES OF INSTRUCTION

446. Curriculum & Instruction (3-3; 3-3)

This course is comprised of the following four one-quarter courses:

215. Aquatics	1
311. Tumbling & Apparatus	1
403. Badminton, Curling & Skiing	2
405. Hockey & Wrestling	2

Hours
Lect. Lab.

The weekly hours of instruction are set out for both terms. The first figure in each term indicates lecture-hours and the second laboratory-hours. Even numbered courses are full courses; odd numbered courses are half courses.

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| 200. | <i>Physical Education in the Elementary Year—</i>
Mrs. E. Kueber
The theory, practice and teaching of physical education in the primary and elementary grades. Activities will include games of low organization, story plays, simple team games, folk dancing, rhythmic, self-testing stunts, tumbling and pyramid building. | (1-2; 1-2) |
| 205. | <i>Activity Course—</i> R. D. Bratton
Theory, practice, and teaching of soccer and volleyball. | (0-3; 0-0) |
| 207. | <i>Activity Course—</i> Mrs. E. Kueber
Theory, practice, and teaching of games of low organization and rhythmic. | (0-0; 0-3) |
| 211. | (M) <i>Activity Course—</i> R. D. Bratton
Theory, practice, and teaching of tumbling apparatus for men. | (0-0; 0-3) |
| 211. | (W) <i>Activity Course</i>
Theory, practice, and teaching of tumbling and apparatus for women. | (0-0; 0-3) |
| 215. | <i>Activity Course—</i> J. Dewar
Theory, practice and teaching of aquatics with emphasis on fundamental skills and stroke techniques. | (0-0; 0-3) |
| 218. | (M) <i>Recreational Activities—</i> Physical Education Staff
Emphasis on the fundamental skills in the following recreational activities: volleyball, basketball, tumbling, badminton, conditioning exercises and body mechanics. Course required of all first-year men not enrolled in the Faculty of Education. | (0-2; 0-2) |
| 228. | (W) <i>Recreational Activities—</i> Physical Education Staff
Emphasis on the fundamental skills in the following recreational activities: volleyball, badminton, dancing, tennis and body mechanics.
Course required of all first-year women not enrolled in the Faculty of Education. | (0-2; 0-2) |
| 232. | <i>Physical Education Curriculum and Instruction</i>
(Secondary)
Planning and teaching secondary school physical education with emphasis on basic activities and intramural activities. Includes 205, 207, 243, 305. | (3-3; 3-3) |

COURSES OF INSTRUCTION

243. *Introduction to Physical Education*—Dr. L. Goodwin (3-0; 0-0)
A survey of the field of physical education, with emphasis on factual information directed toward the development of a scientific program of physical education. This course will include a brief history of physical education as well as underlying philosophies.
305. (M) *Activity Course*—J. Dewar (0-0; 0-3)
Theory, practice, teaching and coaching of basketball for men.
305. (W) *Activity Course* (0-0; 0-3)
Theory, practice, teaching and coaching of basketball for women.
307. *Activity Course*—Mrs. E. Kueber (0-3; 0-0)
Theory, practice and teaching of folk and social dance.
311. *Activity Course* (0-0; 0-3)
Theory, practice and teaching of tumbling and apparatus. Emphasis on class organization and teaching methods.
327. *International Folk Dance* (0-0; 1-2)
Theory, practice and teaching of various international dances in relation to cultural traditions.
329. *The Theory of Play* (3-0; 0-0)
Theories of play as they affect the need and desires of young children and as based on principles from anatomy, physiology and psychology.
332. *Principles of Physical Education* (not offered 1963-64) (3-3; 3-3)
Analysis of factors derived from foundation sciences and philosophies as they affect activity selection and basic objectives at the secondary school level. Laboratory experiences include track and field, dance and gymnastics.
336. Includes 211, 307, 401, 407.
337. *Physical Education Curriculum and Instruction (Elementary)* (1-2; 0-0)
Methods and materials in the teaching of elementary school health and physical education.
392. *Health Education in Secondary Schools*—Mrs. E. Kueber (3-0; 3-0)
Personal and environmental school health with special emphasis on methods and materials in health instruction.
(Not offered in 1963-64)
401. *Activity Course* (0-3; 0-0)
Theory, practice and teaching of track and field with emphasis on coaching techniques, organization and officiating of meets.
403. *Activity Course* (0-0; 0-3)
Theory, practice and teaching of badminton, curling and skiing.
405. *Activity Course* (0-0; 0-3)
Theory, practice, teaching and coaching of hockey and wrestling.
407. *Activity Course*—D. deF. MacIntosh (0-3; 0-0)
Theory, practice, teaching and coaching of football.

COURSES OF INSTRUCTION

423. *Elementary Kinesiology* (not offered 1963-64) (3-0; 0-0)
General skills and motor coordination in terms of mechanics of skeletal and muscular movements. Particular emphasis on activities associated with pre-adolescent years.
425. *Basic Movement Education* (not offered 1963-64) (0-0; 3-2)
Development of coordination, expression and poise through informal and directed movements.
427. *Principles of Gymnastics* (not offered 1963-64) (3-2; 0-0)
Introduction to the use of apparatus, stunts and tumbling.
429. *Fundamental Skills* (not offered 1963-64) (0-0; 3-2)
Application of fundamental skills to individual and team games, special activities, and outdoor education.
442. *Organization and Administration of Health and Physical Education* — Dr. L. Goodwin (3-0; 3-0)
An analysis of factors involved in planning, directing, staffing, co-ordinating, budgeting, and reporting with respect to comprehensive junior and senior high school programs in health instruction, the required program, intramural sports, and interscholastic athletics.
Prerequisite: Physical Education 243.
446. Includes 215, 311, 403, 405.

PHYSICS

Head: Dr. C. E. Challice

Associate Professors: Dr. H. A. Buckmaster, Dr. D. G. Henshaw, Dr. F. Terentiuk, Dr. B. G. Wilson

Assistant Professors: C. D. Anger, J. P. Huston, Dr. J. R. Prescott

Research Associate: J. B. McCaughan

- | | | | | |
|------|---|-------------|-------|-------------|
| 100. | General Elementary Physics (3-3; 3-3) | Lect. | TuTh | 5:00-6:15 |
| | | Lab. | S | 9:00-11:50 |
| 200. | General Physics (3-3; 3-3) | Lect. | TuWFr | 2:00-2:50 |
| | | Lab. A | M | 9:00-11:50 |
| | | B | Th | 2:00-4:50 |
| | | C1, C2 | S | 9:00-11:50 |
| 230. | Physical Properties of Matter,
Heat & Sound (3-3; 3-3)
(for Engineering students) | Lect. | MWF | 11:00-11:50 |
| | | Lab. A1, A2 | M | 2:00-4:50 |
| | | B1, B2 | W | 2:00-4:50 |
| | | C1, C2 | F | 2:00-4:50 |
| 240. | Physical Properties of Matter,
Heat & Sound (3-3; 3-3) | Lect. A | MWF | 10:00-10:50 |
| | | B | MWF | 1:00-1:50 |
| | | Lab. A | M | 9:00-11:50 |
| | | B | Tu | 9:00-11:50 |
| | | C | Tu | 2:00-4:50 |
| | | D | W | 9:00-11:50 |
| | | E | Th | 2:00-4:50 |
| | | F | F | 9:00-11:50 |
| 243. | Elements of Physics (3-1S-3; 3-1S-3) | Lect. | MWF | 9:00-9:50 |
| | | Lab. | Th | 9:00-11:50 |
| | | Seminar | Tu | 9:00-9:50 |

COURSES OF INSTRUCTION

303.	Heat	(2-0; 0-0)	1	TuTh	11:00-11:50
305.	Electricity & Magnetism	(0-0; 2-0)	2	TuTh	2:00-2:50
330.	Physics for 2nd Year Engineers	(3-3; 3-3)	Lect. Lab. A B C D	TuThF M Tu W Th	11:00-11:50 2:00-4:50 2:00-4:50 2:00-4:50 2:00-4:50
340.	Light, Electricity & Magnetism	(3-3; 3-3)	Lect. Lab. A B	MWF Tu Th	9:00-9:50 2:00-4:50 2:00-4:50
341.	Physical Science	(3-0; 3-0)		MW	5:00-6:15
351.	Intermediate Lab.	(0-6; 0-6)		F F	8:00-10:50 2:00-4:50
361.	Optics & Mechanics	(3-0; 3-2S-0)	Lect. Seminar	TuThS TuTh	10:00-10:50 11:00-11:50
400.	The Development of Modern Physics	(3-3; 3-3)	Lect. Lab.	MWF M	11:00-11:50 2:00-4:50
403.	Thermodynamics & Statistical Mechanics	(3-0; 3-0)		MWF	10:00-10:50
405.	Electromagnetic Theory	(3-0; 3-0)		MWF	10:00-10:50
409.	Modern Physics (as 400 with the addition of one hour lecture)	(4-0; 4-0)		MWThF	11:00-11:50
441.	Advanced Mechanics (as Mathematics 441)	(3-0; 3-0)		MWF	8:00-8:50
445.	Radio Physics	(3-3; 3-3)	Lect. Lab.	MWF W	9:00-9:50 2:00-4:50
451.	Senior Lab.	(1-6; 1-6)	to be arranged		
664.	The Production & Optics of Free Elem. Particles & Ions	(2-0; 2-0)			
678.	Cosmic Radiation	(2-0; 2-0)			
680.	Radio Astronomy	(2-0; 2-0)			
100.	<i>General Elementary Physics</i> (3-3; 3-3) This is a terminal course and is not acceptable as a prerequisite for any senior Physics course. Text: To be announced.				
200.	<i>General Physics</i> (3-3; 3-3) A general course in the fundamentals of physics, including mechanics, properties of matter, heat, sound, electricity and light. Illustrated by experiments. Prerequisite: Physics 30. Text: To be announced.				
230.	<i>Mechanics, Electricity and Magnetism</i> (for students in Engineering) (3-3/2; 2-3/2) Mechanics: introduction to dynamics, conservation laws. Electricity and Magnetism; electrostatics and the electric field, potential, capacitance, DC circuits, magnetic fields, electromagnetism, induced EMF, magnetic properties of materials.				

COURSES OF INSTRUCTION

240. *Physical Properties of Matter, Heat and Sound* (3-3; 3-3)
 Mechanics, properties of matter, heat, wave-motion and sound.
 Illustrated by experiments.
 Prerequisite: Physics 30.
 Corequisite: Mathematics 211 (formerly 201). Mathematics 111 and 211 (formerly 200) may be accepted by special permission.
 Text: Sema and Katz *Physics*.
 References: Mendenhall, Eve, Keys and Sutton *College Physics*;
 Edsen *Heat for Advanced Students*; Lemon and Ference *Analytical Experimental Physics*.
243. *Elements of Physics* (3-1S-3; 3-1S-3)
 Mechanics, heat, optics, electricity and magnetism, modern physics.
 The major emphasis is on mechanics and electricity and magnetism.
 Prerequisite: Physics 30.
 Corequisite: Mathematics 217.
 Text: To be announced.
 Note: This course is required for first-year Honors students in Mathematics and Physics. Other students are admitted only with the consent of the instructor.
303. *Heat* (2-0; 0-0)
 Equations of state, real gases, critical phenomena, law of corresponding states, Joule-Kelvin effect, kinetic theory, Maxwell distribution, Law of Thermodynamics, Carnot cycle, thermodynamic scale of temperature, entropy, topics from heat transfer and radiation.
 Prerequisites: Physics 243 and Mathematics 217 or consent of department.
 Corequisites: Mathematics 315 (formerly 304) or 317 (formerly 306).
 Text to be announced.
305. *Electricity and Magnetism* (2-0; 2-0)
 Vector formulation of electromagnetism, E, D, B, H, & J. Maxwell's equations, Poynting vector, electromagnetic waves. A.C. and D.C. circuit analysis including some simple active elements.
 Prerequisites: Physics 243 and Mathematics 217 or consent of department.
 Corequisites: Mathematics 315 (formerly 304) or 317 (formerly 306).
 Note: Credit will not be given for both Physics 340 and Physics 305.
 Text to be announced.
340. *Light, Electricity and Magnetism* (3-3; 3-3)
 A course designed to follow Physics 240, and to give foundation in physics suitable for work in other physical sciences. Electrostatics, potential, capacitors, D.C. circuits, magnetism and magnetic field, electromagnetism, induced E.M.F., self-inductance, introduction to alternating currents. Physical optics, interference and diffraction, spectra, atoms and electrons.
 Prerequisites: Physics 230 (formerly 238) or 240, Mathematics 200 or 201 (formerly 211).
 Note: Credit will not be given for both Physics 305 and Physics 340.
 Text: Arthur I. Kip *Electricity and Magnetism* (McGraw-Hill).
341. *Physical Science* (3-0; 3-0)
 A course designed for B.A. and B.Ed. students to give them some appreciation of fundamental ideas and methods in the physical sciences, of modern trends in this field, and of its relation to other disciplines. Illustrative material will be taken from Physics, Chemistry, Astronomy and Geology, and the history and development of the subject will be stressed.
 Text to be announced.
 Note: This course is not open to first-year students, and may not be taken for credit by students who have already taken Physics 100 or 200.

COURSES OF INSTRUCTION

351. *Intermediate Laboratory* (0-6; 0-6)
Experiments in mechanics, optics, heat and electricity.
This course cannot be taken separately.
361. *Optics and Mechanics* (3-0; 3-2S-0)
Geometric theory of optical instruments, simple wave theory of light and sound, statics, dynamics of a particle and of a rigid body. Prerequisites: Physics 243 and Mathematics 217 or consent of department.
Corequisites: Mathematics 317 (formerly 306) or 315 (formerly 304).
Note: Credit will not normally be given for both Mathematics 321 and Physics 361.
Text to be announced.
400. *The Development of Modern Physics* (3-3; 3-3)
A study of the historical background of modern physics, emphasizing the development of current theoretical conceptions and modern experimental methods. Topics will include: kinetic theory of matter; electrical conduction, electrons; electrical and neutral particles; radiation and the quantum theory; radio-activity and nuclear physics; cosmic rays; relativity.
Prerequisites: Physics 200, or 240 and 340, or 240 and 380, Mathematics 211 or 200 or 201.
Textbook: Wiedner and Sells, *Elementary Modern Physics*.
403. *Thermodynamics and Statistical Mechanics* (3-0; 3-0)
More advanced discussion of the laws of thermodynamics, Nernst Heat Theorem. Generalized state functions, transport phenomena, Law of Mass Action, Boltzmann, Bose-Einstein and Fermi-Dirac statistics, thermal radiation, irreversible processes.
Prerequisites: Physics 303, Physics 361, Mathematics 431 (formerly 421) and 433 (formerly 422) or Mathematics 415 (formerly 404).
Text to be announced.
405. *Electromagnetic Theory* (3-0; 3-0)
Potential theory, Maxwell's equations, electromagnetic waves in continuous media transmission lines; selected topics in electromagnetism.
Prerequisites: Physics 305, or 340, Mathematics 415 (formerly 404) or Mathematics 431 (formerly 421) and 433 (formerly 422).
Text to be announced.
409. *Modern Physics* (4-0; 4-0)
Special relativity, electrons and photons, Bohr model and the old quantum theory. Schrodinger's equation and simple applications, x-rays, radio-activity and nuclear structure, solid state physics, properties of crystals, electrons in solids, low temperature physics.
Prerequisites: Physics 361 and 305.
Prerequisite or corequisite: Mathematics 415 (formerly 404) or 431 (formerly 421) and 433 (formerly 422).
Text: To be announced.
441. *Advanced Mechanics* (3-0; 3-0)
Central orbits, scattering theory, harmonic oscillator, normal modes of vibration, space motion of a rigid body. Relative motion; tops and gyroscopes. D'Alembert's principle, generalised coordinates, Lagrange's equations, Hamilton's principle.
Prerequisites: Mathematics 211 (formerly 201) or 217 and Mathematics 321 (formerly 310) or Physics 361.
Note: Credit will not be given for both Mathematics 441 (formerly 430) and Physics 441.
Text: To be announced.

445. *Radio Physics* (not offered in 1963-64) (3-3; 3-3)
 The application of electromagnetic theory, solid state theory and system analysis to electronic devices. Transmission lines, wave guides and antennas as examples of boundary value problems in electromagnetic theory; electrical and magnetic properties of semi-conductors; Matrix, topological and signal-fluro-graph methods of circuit and system analysis.
 Prerequisite: Physics 340 or 380; Mathematics 304 or 306.
 Corequisite: Mathematics 404 (formerly 415) or consent of instructor.
451. *Senior Laboratory* (1-6; 1-6)
 Experiments in modern physics, more advanced experiments in electromagnetism and optics.
Note: This course cannot be taken separately.
570. *Quantum Mechanics* (Text to be announced) (3-0; 3-0)
573. *Topics in Nuclear Physics* (not offered in 1963-64) (2-0; 2-0)
 Interactions of radiation with matter, nuclear reactions, nuclear properties, nuclear models. Elementary particles.

GRADUATE COURSES

664. *The Production and Optics of Free Elementary Particles and Ions*
 —C. E. Challice (not given in 1963-64) (2-0; 2-0)
673. *Advanced Nuclear Physics*—J. R. Prescott (2-0; 2-0)
678. *Cosmic Radiation*—B. G. Wilson (2-0; 2-0)
680. *Radio Astronomy*—H. A. Buckmaster (not offered 1963-64) (2-0; 2-0)
683. *Upper Atmosphere Physics*—C. D. Anger (2-0; 2-0)
688. *Solid State Physics*—D. G. Henshaw (2-0; 2-0)
690. *Biophysical Methods*—F. Terentiuk (2-0; 2-0)

POLITICAL ECONOMY

Head: E. Burke Inlow

Associate Professors: Frank R. Anton, Frederick C. Engelmann,

Assistant Professors: Horst Betz, David Cox, Donald R. Gordon, Alan R. Plotnick, Robert R. Wright

ECONOMICS

- | | | | | | |
|------|------------------------------|------------|--------|------|-------------|
| 200. | Principles of Economics | (3-0; 3-0) | Sec. A | MWF | 10:00-10:50 |
| | | | B | MWF | 1:00-1:50 |
| | | | C | MWF | 3:00-3:50 |
| 300. | Micro--Economic Analysis | (3-0; 3-0) | | MWF | 3:00-3:50 |
| 320. | International Trade | (3-0; 3-0) | | MWF | 2:00-2:50 |
| 340. | Money & Banking | (3-0; 3-0) | | MWF | 11:00-11:50 |
| 350. | Public Finance | (3-0; 3-0) | | TuTh | 1:30-3:00 |
| 380. | Macro-Economic Analysis | (3-0; 3-0) | | MWF | 10:00-10:50 |
| 390. | Comparative Economic Systems | (3-0; 3-0) | | MWF | 10:00-10:50 |
| 504. | Econometrics | (3-0; 3-0) | | TuTh | 3:30-5:00 |

COURSES OF INSTRUCTION

POLITICAL SCIENCE

200.	Elements of Political Science (3-0; 3-0)	Sec. A B	MWF MWF	11:00-11:50 2:00-2:50
310.	History of Political Thought (3-0; 3-0)		MWF	3:00-3:50
311.	Governments of Europe (3-0; 3-0)		TuTh	1:00-2:30
320.	Government of Canada (3-0; 3-0)		MWF	10:00-10:50
323.	Gov. of the U.K. and Commonwealth (3-0; 3-0)		TuTh	8:30-10:00
331.	Government of the United States (3-0; 3-0)		MWF	9:00-9:50
360.	International Politics (3-0; 3-0)		MWF	2:00-2:50
370.	Politics of Emergent Nations (3-0; 3-0)		MWF	11:00-11:50
391.	Parties & Pressure Groups (3-0; 3-0)		TuTh	3:00-4:30
463.	Developments in World Politics since 1945 (3-0; 3-0)		MWF	1:00-1:50
200.	<i>Principles of Economics</i> A survey of various aspects of economics; the nature of economic problems and systems; the functions of money; commercial and central banking; national income analysis; monetary and fiscal policy; pricing under competitive and monopolistic conditions; selected topics in analysis and policy. Text: To be announced. Note: This is a prerequisite for all senior Economics courses except 310, 311 and 350.			

200.	<i>Elements of Political Science</i> —Dr. E. B. Inlow A study of the principles and practices of modern government, with the emphasis on the democratic constitutional state. Among the topics studied are the nature and theory of the state; types of constitutions; the functions and composition of the legislature, executive and judiciary; representation; political parties and pressure groups. Text: To be announced.			
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ECONOMICS

300.	<i>Micro-Economic Analysis</i> The theory of Consumer behavior; price and output determination under competition; monopoly and other market structures; the allocation of resources and resource pricing; the distribution of income. Prerequisite: Economics 200.			
310.	<i>Canadian Economic Development</i> (3-0; 3-0) The relative growth of various industries and the regional distribution of economic activity with emphasis on the role of export staples, technology, capital accumulation and government. (Not offered 1963-64)			
311.	<i>Western European Economic Development</i> (3-0; 3-0) The development of the economy of Western Europe since the middle ages with emphasis on economic change in the United Kingdom, France and Germany. (Not offered 1963-64) (Both of the above courses to be taught in 1964-65).			

320. *International Trade*
An analysis of the theoretical basis of international trade, the theory of balance of payments adjustments and related problems. A survey of the development of the economy of the North Atlantic community in the modern period with special emphasis on attempts to broaden trade and investments since the end of the Second World War.
Prerequisite: Economics 200.
330. *Labor Problems*
A survey of the nature of labor economics and labor problems, including the various approaches of organized workers and employers to these problems. The approach of government to labor problems, including industrial disputes and social security. Applications of economic analysis to wages, unemployment and related problems.
340. *Money and Banking*
The principles of money, monetary systems, commercial banking, central banking, monetary theory and policy, foreign exchange.
Prerequisite: Economics 200.
350. *Public Finance*
A survey of principles and operations relating to government expenditures, revenue and debts. The objectives and techniques of fiscal policy in a theoretical framework, with emphasis on the level of economic activity, distribution of income and allocation of resources.
Prerequisite: Economics 200.
370. *Industry and Government*
An examination of the structure and functioning of industry; investment and market problems; the relationships of government and industry with special reference to price and output problems.
Prerequisite: Economics 200.
(Not offered 1963-64)
380. *Macro-Economic Analysis*
National income concepts and determination; the theory of aggregate consumption and investment; business cycle and growth applications of aggregate analysis.
Prerequisite: Economics 200.
390. *Comparative Economic Systems* (3-0; 3-0)
A comparative study of the institutions and theories of important contemporary economies and systems of economic organization, with emphasis on the "mixed" capitalist system, "command" economies of the Soviet type, and transitional systems embodying socialist as well as capitalist principles. A survey of socialist economic thought with emphasis on the economics of Marx.
Prerequisite: Consent of instructor.
504. *Econometrics* (3-0; 3-0)
A study of the statistical concepts of probability, distributions, moments, and statistical inference as applied to economic problems. Estimation techniques and time series analysis of economic data.
Prerequisites: Economics 300 and 380; Statistics 265; Mathematics 211 or 211 and 111 (formerly 201 or 200).
506. *Mathematical Economics* (3-0; 3-0)
A survey of mathematical models in economics. An analysis of linear and non-linear programming, game and decision theory, and Leontief systems.
Prerequisites: Economics 300 and 380; Statistics 265; Mathematics 211 or 211 and 111 (formerly 201 or 200).
(Not offered 1963-64)

COURSES OF INSTRUCTION

POLITICAL SCIENCE

310. *History of Political Thought*—E. Burke Inlow
An historical and critical survey of the development of political and social philosophy from Ancient Greece to the present time, with selected readings from major political writers.
311. *Governments of Europe*—F. C. Engelmann (3-0; 3-0)
A study of the structure and function of selected governments of contemporary Europe compared with the system of the Soviet Union.
320. *Government of Canada*—D. R. Gordon (3-0; 3-0)
A study of the structure and functioning of the government of Canada, especially of the Commons, the Senate, the Cabinet System, the Civil Service; and the role of political parties.
323. *Governments of the United Kingdom and Commonwealth* (3-0; 3-0)
—D. Cox
A study of the structure and functioning of the government of the United Kingdom, and the adaptation of the Cabinet System in selected countries within the Commonwealth.
331. *Government of the United States*—F. C. Engelmann (3-0; 3-0)
A study of the politics of the United States with emphasis on formal institutions in themselves and in relation to the rest of society.
360. *International Politics*—D. Cox (3-0; 3-0)
A study from the viewpoint of political science of the elements and general nature of the relations between modern states. The framework and functioning of international institutions—law, diplomacy and organization—is studied and attention is paid to the political and other forces at work, including the role of power and the efforts to achieve international peace.
370. *Politics of Emergent Nations*—D. R. Gordon (3-0; 3-0)
A study of the institutions and politics of selected nations in Asia, Africa and Latin America.
391. *Parties and Pressure Groups*—F. C. Engelmann (3-0; 3-0)
A study of the role of political parties and pressure groups in the governmental process.
463. *Developments in World Politics Since 1945* (3-0; 3-0)
—D. R. Gordon
A survey of the major developments in world politics since 1945, with special emphasis on the foreign policies of the major powers. Prerequisite: Political Science 360 or consent of the department.
510. *Advanced Political Thought*—E. Burke Inlow (3-0; 3-0)
A detailed analysis of selected political theories.
Prerequisites: Political Science 310 or consent of instructor.
(Not offered in 1963-64)
521. *Government of Canada (Advanced)*—Staff (3-0; 3-0)
(Not offered in 1963-64)

COURSES OF INSTRUCTION

PSYCHOLOGY

Head: A. E. D. Schonfield

Associate Professor: Dr. E. S. Edgington

Assistant Professors: Dr. M. Humphries, Dr. D. Gibson

Lecturer: Dr. J. Logan

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|------|--------------------------------------|------------|--------|----------------|-------------|
| 202. | Introduction to General Psychology | (3-0; 3-0) | Sec. A | MWF | 9:00-9:50 |
| | | | B | TuThS | 9:00-9:50 |
| | | | C | MWF | 4:00-4:50 |
| 340. | Social Psychology (as Sociology 340) | (3-0; 3-0) | | MWF | 2:00-2:50 |
| 352. | Development Psychology | (3-0; 3-0) | | MWF | 11:00-11:50 |
| 364. | Learning | (3-3; 3-0) | | MWF | 9:00-9:50 |
| 382. | Personality | (3-0; 3-0) | | MWF | 3:00-3:50 |
| 430. | Theory & Practice of Psychometrics | (3-3; 3-3) | Lect. | MWF | 11:00-11:50 |
| | | | Lab. | Tu | 10:00-11:50 |
| 460. | Experimental Psychology | (3-3; 3-3) | Lect. | MWF | 10:00-10:50 |
| | | | Lab | Th | 9:00-11:50 |
| 488. | Abnormal Psychology | (3-0; 3-0) | | MWF | 2:00-2:50 |
| 500. | Proseminar | | | to be arranged | |
| 560. | Advanced Experimental Psychology | (3-3; 3-3) | Lect. | MWF | 3:00-4:50 |
202. *Introduction to General Psychology* (3-0; 3-0)
A survey of problems, methods and principles in various fields of psychology.
Text: To be announced.
340. *Social Psychology*—M. Humphries and D. C. Mills (3-0; 3-0)
(See Sociology 340)
352. *Developmental Psychology*—M. Humphries (3-0; 3-0)
A study of behavior as it is related to normal development and aging.
Prerequisite: Psychology 202; or, with the consent of instructor, Psychology 212 or 220.
364. *Conditioning and Learning*—A. E. D. Schonfield (3-0; 3-0)
A study of acquisition, retention and utilization of learned behavior.
Prerequisite: Psychology 202; or, with the consent of instructor, Psychology 212 or 220.
382. *Personality*—A. E. D. Schonfield (3-0; 3-0)
Theoretical approaches to personality; behavior dynamics, determinants of personality biological, organic, experimental, social.
Prerequisite: Psychology 202.
430. *Theory and Practice of Psychometrics*—J. Logan (3-3; 3-3)
The nature of psychological tests, with practical work in administration, scoring and interpretation of tests.
Prerequisites: Psychology 202 and Statistics 215 (formerly 205) or 265 (formerly 255) or permission of instructor. (The statistics prerequisite can be taken as a corequisite with the consent of the instructor.)

COURSES OF INSTRUCTION

460. *Experimental Psychology*—M. Humphries (3-3; 3-3)
An introduction to the methods and principles of experimental investigation in psychology with laboratory participation in demonstrations and exercises.
Prerequisites: Same as 430.
488. *Abnormal Psychology* (3-0; 3-0)
A general introduction to abnormal psychology.
Prerequisite: Psychology 382 and consent of the department.
500. *Psychology Proseminar*—The Staff (3-0; 3-0)
An intensive survey of the major areas, problems, and methodologies in the field of psychology.
Required of all students in the fourth year of psychology.
560. *Advanced Experimental Psychology*—M. Humphries and J. Logan (3-3; 3-3)
The methods and principles of experimental investigations in psychology in relation to fundamental theoretical problems. The laboratory work will familiarize the student with basic research design and procedure, and will afford an opportunity for independent investigation.
Prerequisite: Psychology 460.
599. *Honors Thesis* (3-3; 3-3)

SOCIOLOGY AND ANTHROPOLOGY

Head: D. L. Mills

Associate Professor—H. Zentner

Assistant Professors: Miss M. A. Schwartz, D. L. Spence, D. F. Swift

Instructor—R. G. Forbis

202.	Introductory Sociology	(3-0; 3-0)	Sec. A	MWF	12:00-12:50
			B	TuThS	9:00-9:50
			C	MWF	2:00-2:50
			D	MWF	8:00-8:50
310.	Social Science Research Methods	(3-2; 3-2)		Tu	9:00-11:50
				Th	9:00-10:50
320.	Social Problems	(3-0; 3-0)		MW	5:00-6:15
340.	Social Psychology (as Psychology 340)	(3-0; 3-0)		MWF	2:00-2:50
391.	Sociology of Occupations & Professions	(3-0; 3-0)		MWF	10:00-10:50
393.	Political Sociology	(3-0; 3-0)		MWF	4:00-4:50
410.	Sociological Analysis	(3-2; 3-2)		Tu	2:00-4:50
				Th	2:00-3:50
460.	Social Organization	(3-0; 3-0)		MWF	11:00-11:50
502.	Conf. Course for Honors & Grad. Students	(3-3; 3-3)	to be arranged		
530.	Seminar in Sociological Theory	(3S-0; 3S-0)	to be arranged		

SOCIOLOGY

202. *Introductory Sociology* (3-0; 3-0)
The sociological study of society, social institutions, group behavior, personality formation and social change.
Text: To be announced.
310. *Social Science Research Methods*—D. L. Mills (3-2; 3-2)
Study and application of the various research techniques used in sociology and related social sciences, with special emphasis on interviewing, questionnaires, attitude scales, sociometric testing, survey and sampling.
Prerequisite: Consent of instructor.
Text: To be announced.
320. *Social Problems*—Staff (3-0; 3-0)
The analysis of social and personal disorganization in relation to social change, culture conflict and value systems.
Text: To be announced.
340. *Social Psychology*—M. A. Schwartz and M. Humphries (3-0; 3-0)
A study of the emergence of personality in various interaction situations; analysis of the relationship of individual and social group. Consideration of the forces underlying the development of the social order, with special attention given to crowds, mobs, panics, manias, cults, fashions, fads, social ideologies, social movements, and other forms of mass behavior.
Prerequisite: Psychology 202 or Sociology 202 or equivalent.
Text: To be announced.
360. *Social Class in Modern Society*
An analysis of social stratification in western society, with reference to the effects of industrialization, and including comparative analysis of primitive societies. Special attention is given to the basis of stratification, the structure and function of social class systems, social mobility, and the special classes in modern society, such as the "managerial class," labor, "power elites," etc.
(Not offered in 1963-64)
376. *Sociology of Religion* (3-0; 3-0)
Sociological analysis of the institution of religion and religious behavior in preliterate and modern society.
(Not offered in 1963-64)
390. *Industrial Sociology* (3-1; 3-1)
A sociological analysis of the industrial system; industry and society; the industrial community; management-labour relations; bureaucracy; the sociology of work and the professions; informed organization in the work group.
(Not offered in 1963-64)
391. *Sociology of Occupations and Professions*—D. L. Mills (3-0; 3-0)
Occupational recruitment, selection and induction; training and socialization; occupational mobility, job and career patterns; client-professional relationships; occupational and professional associations; inter-occupational relations; work in complex organizations; the professionalization of occupations; public attitudes and occupational stereotypes.
Prerequisite: Sociology 202 or consent of the instructor.
Text: To be announced.
393. *Political Sociology*—M. A. Schwartz (3-0; 3-0)
A study of the social basis of political institutions and practices, and of the impact of these institutions and practices on society.
Prerequisites: Political Science 200 or Sociology 202.
Text: To be announced.

COURSES OF INSTRUCTION

410. *Sociological Analysis*—Staff (3-2; 3-2)
Study of techniques used in sociological analysis; application of analytical techniques to social data, critical evaluation of presently used techniques and examination and the development of alternative approaches.
Prerequisite: Sociology 310 or consent of instructor.
Text: To be announced.
460. *Social Organization*—Staff (3-0; 3-0)
Theories of social organization, analysis of such forms of social organization as kinship groups, bureaucracy, economic system, science, etc., and their interrelationship in functioning social systems.
Prerequisite: A first course in sociology.
Text: To be announced.

Honor and Graduate Courses

502. *Conference Course in Sociology for Honors and Graduate Students*—Staff (3-3; 3-3)
Arranged for various topics of sociology on the basis of special interest and need. Consent of the instructor required.
530. *Seminar in Sociological Theory*—D. L. Spence (3s-0; 3s-0)

ANTHROPOLOGY

202. Elementary Anthropology (3-0; 3-0) MWF 9:00-9:50
395. Prehistoric Archeology (3-1; 3-1) TuTh 10:30-11:50
350. Indians of North America (3-0; 3-0) TuTh 1:30-2:50
202. *Elementary Anthropology* (3-0; 3-0)
An introduction to the field of anthropology, including human paleontology, race, human prehistory, linguistics and ethnology.
Texts: To be announced.
302. *Cultural Anthropology* (3-0; 3-0)
The nature of culture; its uniformities and varieties; comparative study of primitive cultures in terms of family, clan, political organization, economic systems, religion, art, folk lore and social customs; processes of cultural change.
(Not given in 1963-64)
350. *Indians of North America* (3-1; 3-1)
A survey of the cultural and linguistic areas of aboriginal North America, and including a comparative and historical study of technology, social organization, economic systems, religions, art and language. Some emphasis will be given to the Indians of Canada.
Text: To be announced.
360. *Peoples and Cultures of Latin America* (3-0; 3-0)
Study of the basic sources of modern Latin American society and culture; the aboriginal Indian traditions and those brought from the Iberian Peninsula. Emphasis will be placed on the institutional and value systems of modern Latin America.
(Not given in 1963-64)
395. *Prehistoric Archeology* (3-1; 3-1)
Archeology as the anthropological approach to reconstruction and study of extinct, non-literate societies; archeological techniques, methods and modes of interpretation; comparative analysis of the major prehistoric developments of the world.
Prerequisite: A Course in Anthropology or Classics 356 or consent of instructor.
Text: To be announced.

410. *Theory of Culture and Culture Change* (3-0; 3-0)
 Study of past and current thought concerning the nature of culture and culture change, with attention to such concepts as cultural evolution, diffusion, invention, acculturation, patterns and themes. Relation of theory to problems of planned culture change in underdeveloped areas of the contemporary world.
 Prerequisite: Anthropology 202, Sociology 202 or consent of instructor.

(Not given in 1963-64)

STATISTICS

Members of the Mathematics and Psychology Departments

- | | | | | | |
|------|---|------------|---------|-----|-------------|
| 215. | Behavioural Statistics | (3-3; 3-3) | Lect. A | MWF | 9:00-9:50 |
| | | | B | MWF | 1:00-1:50 |
| | | | Lab. A | Th | 9:00-11:50 |
| | | | B | Th | 2:00-4:50 |
| 265. | Elementary Statistics | (3-3; 3-3) | Lect. A | MWF | 10:00-10:50 |
| | | | B | MWF | 2:00-2:50 |
| | | | Lab. A | S | 9:00-11:50 |
| | | | B | Tu | 2:00-4:50 |
| 267. | Numerical Methods & Statistics (Honors) | (3-2; 3-2) | Lect. | MWF | 11:00-11:50 |
| | | | Lab. | Tu | 8:00-9:50 |
| 354. | Elementary Statistics | (3-3; 3-3) | Lect. A | MWF | 8:00-8:50 |
| | | | B | MWF | 2:00-2:50 |
| | | | Lab. A | W | 10:00-12:50 |
| | | | B | F | 10:00-12:50 |
215. (formerly 205) *Behavioural Statistics* (3-3; 3-3)
 Tabulation, graphical representation and reduction of data. Measures of location and dispersion. Probability and relative frequency. The binomial and normal distributions. Curve fitting and the chi-square test of goodness-of-fit. Relation between sample and population. Confidence intervals and confidence interval charts. The t and F distributions. Testing of statistical hypotheses. Linear regression and prediction. Simple correlation. Test of independence in contingency tables. Non-parametric tests.
 Applications of the above statistical concepts to the evaluation and interpretation of empirical data in psychology and sociology.
 Text: To be announced.
265. (formerly 255) *Elementary Statistics* (3-3; 3-3)
 Graphs, tables, diagrams. Frequency distributions, averages, dispersion, moments. Elementary probability. Binomial, normal and Poisson distributions. Sampling. Regression and correlation. Significance tests. Applications to data in various fields.
 Prerequisite: Mathematics 30.
 Text: Kenny and Keeping, *Mathematics of Statistics*, Part 1 (Van Nostrand).
267. *Numerical Mathematics, Statistics and Probability* (3-2; 3-2)
 Fixed-point and significant digit arithmetic. Round-off error differences of data and of elementary tabular functions. Use of mathematical tables. Difference and summation operators. Factorial polynomials. Fitting of equispaced data. Difference approximation to differential and integral operators. Simultaneous linear equations and method of solution. Matrices. Set theory of events. Probability measure. Finite Markov chains. Relative frequencies and prob-

COURSES OF INSTRUCTION

ability. The binomial and Poisson distributions. The normal distribution. Elements of statistical inference.

Prerequisite: Mathematics 30 and 31.

Text: To be announced.

Note: This course is required for first-year Honours students in Mathematics and Physics. Other students are admitted only with the consent of the instructor.

354. *Statistics* (for students in the Faculty of Commerce) (3-3; 3-3)
 Graphs, tables, diagrams. Frequency distributions, averages, dispersion, skewness. Moments, normal law, regression, simple correlation, multiple correlation, applications to data in various fields. Sampling methods, time series, seasonal and cyclical variations, index numbers, tests of significance.
 Prerequisite: Mathematics 30 of high school.
 Textbook: Kenny and Keeping, *Mathematics of Statistics*, Part I.
461. (formerly 450) *Probability and Statistics* (3-0; 0-0)
 Theory of probability. Distribution functions and characteristic functions. Central limit theorem. Sampling. Exact sampling distribution. Confidence intervals. Maximum likelihood. Method of least squares. Analysis of variance. Statistical inference.
 Prerequisites: Mathematics 315 (304) and preferably Mathematics 265 (255) or equivalent.

ZOOLOGY

Associate Professor: Dr. R. Hartland-Rowe

Assistant Professors: Dr. P. K. Anderson, Dr. Nancy E. Henderson

Sessional Instructor: Dr. G. Burgess

220. Elementary Zoology	(3-3; 3-3)	Lect.	A	MWF	11:00-11:50
			B	TuThS	11:00-11:50
			C	MWF	2:00-2:50
			D	TuTh	2:00-2:50
			S		10:00-10:50
		Lab.	A	M	9:00-11:50
			B	Tu	9:00-11:50
			C	W	9:00-11:50
			D	Th	9:00-11:50
			E	F	9:00-11:50
			F	S	9:00-11:50
			G	M	2:00-4:50
			H	Tu	2:00-4:50
			I	W	2:00-4:50
			J	Th	2:00-4:50
			K	F	2:00-4:50
300. The Chordates	(3-3; 3-3)	Lect.		MWF	8:00-8:50
		Lab	A	Tu	8:00-10:50
			B	Tu	11:00-1:50
			C	Tu	2:00-4:50
315. Elementary Genetics	(3-0; 0-0)	1		MWF	12:00-12:50
317. Advanced Genetics	(0-0; 3-0)	2		MWF	12:00-12:50
342. Comparative Physiology	(3-3; 3-3)			MTuF	10:00-10:50
		Lab.		Th	1:00-3:50

COURSES OF INSTRUCTION

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|------|--|------------|--------|----------------------|-----------------|--------------------------------------|
| 350. | The Invertabrates | (3-3; 3-3) | | Lect.
Lab. A
B | MWF
Th
Th | 9:00-9:50
9:00-11:50
1:00-3:50 |
| 362. | Ecology | (3-3; 0-0) | 1
1 | Lect.
Lab | MWF
F | 4:00-4:50
1:00-3:50 |
| 371. | Ethology | (3-0; 0-0) | 1 | | MWF | 11:00-11:50 |
| 421. | Principles of Evolution | (0-0; 3-0) | 2 | | MWF | 11:00-11:50 |
| 467. | Advanced Animal Ecology | (0-0; 3-0) | 2 | | MF | 4:00-5:30 |
| 520. | Seminar in Zoology | (1S; 1S) | | | | |
| 529. | Special Problems in Zoology | | | | | |
| 564. | Special Problems in Ecology | | | | | |
| 220. | <i>Elementary Zoology</i> | (3-3; 3-3) | | | | |
| | Animal organization; comparative morphology; essentials of histology; principal phenomena of distribution, behavior, ecology, development and reproduction, evolution, variation and heredity.
Text: To be announced. | | | | | |
| 300. | <i>The Chordates</i> —P. K. Anderson | (3-3; 3-3) | | | | |
| | A comparative review of the chordates, with dissections of available types from all classes.
Prerequisite: Zoology 220 or 70% in Grade XII Biology 32. | | | | | |
| 315. | <i>Elementary Genetics</i> | (3-0; 0-0) | | | | |
| | A course designed primarily for biologists, dealing with mendelian inheritance, linkage, sex determination, mutation, the structure and function of the gene, population genetics, developmental genetics, cytoplasmic inheritance, and relating topics.
Prerequisite: Zoology 220, Botany 271 (formerly 201), or consent of instructor. | | | | | |
| 317. | <i>Advanced Genetics</i> | (0-0; 3-0) | | | | |
| | A continuation of Zoology 315 designed primarily for students majoring in the biological sciences and/or intending graduate work in the biological sciences. Particular emphasis will be placed on microbial and biochemical genetics, the chemical structure of the genetic material, the mechanism of gene action, and statistical methods in genetics.
Prerequisites: Zoology 315 and Chemistry 250 or 350, or consent of the instructor. | | | | | |
| 342. | <i>Comparative Physiology</i> —N. E. Henderson | (3-3; 3-3) | | | | |
| | A course concerned with the study of animal functions. Topics to be discussed include: respiration, digestion, excretion, nerve and muscle physiology, reproduction, growth and the influence of environmental factors on animals. Students will be required to take part in tutorials and they will be expected to devote additional time to laboratory work.
Prerequisites: Zoology 300 or 350, Chemistry 250 or 350, or consent of instructor. | | | | | |
| 350. | <i>The Invertebrates</i> —R. C. B. Hartland-Rowe | (3-3; 3-3) | | | | |
| | A survey of the invertebrates with emphasis on functional anatomy and the evolution of organ systems.
Prerequisite: Zoology 220. | | | | | |

COURSES OF INSTRUCTION

362. *Elementary Animal Ecology*—P. K. Anderson (3-3; 0-0)
An introduction to the principles governing the relationships between animals and their environments.
Prerequisites: Zoology 220, Botany 271 (formerly 201), or consent of instructor.
365. *Studies in Animal Ecology* (1S-3; 0-0) or (0-0; 1S-3)
Field and laboratory studies designed to demonstrate methods of analysis in animal ecology.
Prerequisite: Zoology 362.
(Not offered in 1963-64)
371. *Ethology* (3-0; 0-0)
An introduction to the study of behaviour in invertebrate and vertebrate animals.
Prerequisites: Zoology 220 or consent of instructor.
417. *Population Genetics* (0-0; 3-0) or (3-0; 0-0)
The genetic structure of populations and the operative factors in stability and change.
Prerequisites: Zoology 315 or Genetics 351, or consent of instructor.
(Not offered in 1963-64)
421. *Principles of Evolution*—R. Hartland-Rowe (0-0; 3-0)
Darwinian and post-Darwinian concepts of evolution; mechanisms of evolutionary drift; isolation; variation and other selected topics.
Prerequisites: Zoology 220, Botany 271 (formerly 201), or consent of instructor.
467. *Advanced Animal Ecology*—P. K. Anderson (3-0; 0-0)
Current problems and recent research in areas of particular significance. Topics will vary from year to year. May be repeated for credit. Topic for 1963-64: Dispersion, dispersal and the dynamics of animal populations.
Prerequisites: Zoology 362 or consent of instructor.
520. *Seminar in Zoology* (1-0; 1-0)
Required of all fourth-year Honours and Graduate Students.
529. *Special Problems in Zoology* (3 hours either or both terms)
564. *Special Problems in Ecology* (3-0; 0-0) or (0-0; 3-0)
Guided readings on specific problems for Honour and Graduate students.

PART VIII

Awards and Financial Assistance

AWARDS AND FINANCIAL ASSISTANCE

Matriculation

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GENERAL INFORMATION

This Calendar includes all matriculation, undergraduate, and graduate awards which are open either to students at both Calgary and Edmonton or to students at Calgary only. Awards which are restricted to students at Edmonton are not listed. For a complete list of all awards refer to the University Awards Calendar or the Composite Calendar.

Students of high ability or those who require financial assistance are urged to read carefully the sections of interest to them.

Application forms may be had from the Student Awards Office, Edmonton, or from the Registrar's Office, Calgary. *Unless otherwise stated completed applications must be received by the Student Awards Office, Edmonton, by dates as follows:*

Matriculants — August 1

Undergraduates — June 15

Graduates — March 1

Where no application information is shown, the award is made automatically without applications.

Publication of Awards is as follows:

Graduating or Graduate Students	—Spring Convocations
Undergraduate (automatic awards)	—First week of June
Undergraduate (awards applied for)	—First week of July
Matriculant (and Undergraduate of Aug. 1 date)	—First week of Sept.

In order that awards may be equitably distributed, no student may hold more than one major award in any one year.

All monetary awards except certain cash prizes are contingent upon the student proceeding with his university course and are payable only when the student is in actual attendance at the University. Payment of fees is a first charge against such awards.

The University assumes liability for the payment of fellowships, scholarships, bursaries, prizes and other awards only to the extent that gifts from donors, or returns from particular investments for these purposes, will permit.

For further information regarding scholarships, inquiry should be made to:

Mr. R. B. Wishart,
Administrator of Student Awards,
University of Alberta,
Edmonton, Alberta.

or Registrar's Office,
University of Alberta, Calgary,
Calgary, Alberta.

As this calendar is published a considerable time before the opening of the Session, the University reserves the right to make whatever changes circumstances may require, including cancellation of particular awards.

MATRICULATION AWARDS

These awards are tenable at the University of Alberta in Edmonton or Calgary. There are a few which are also tenable at a Junior College affiliated with the University.

Awards by the University of Alberta and the Province of Alberta are listed first. The remainder are listed alphabetically.

University of Alberta Honor Prizes—The Board of Governors of the University offers annually a prize to the value of \$50.00 to each student from Alberta high schools entering a degree or diploma program in the University with an average standing in the examination units of matriculation of at least 85%.

University of Alberta Matriculation Scholarships—The University of Alberta offers annually three scholarships of the value of three years' fees in any Faculty at the University of Alberta to matriculating students, from Alberta High Schools, other than those eligible for a Tegler or a Bennett matriculation scholarship.

The scholarships will be awarded to the three students having the highest average standing in the examinations covering the subjects for complete senior matriculation (Grade XII) as prescribed in the course of studies. To be eligible for one of these scholarships a student must have completed the grades from ten to twelve inclusive, in not more than four years, and secured an average mark of at least 80% in all subjects considered as the bases of award.

Any student holding one of these scholarships must make at least second class standing in order to be eligible for the scholarship during the succeeding year.

Application should be made by August 1.

University of Alberta War Memorial Scholarships—The War Memorial Fund of the University of Alberta will provide one or more scholarships of \$650.00 to be awarded for study in a degree program at the University of Alberta on the basis of scholastic ability and financial need and according to the following priorities: (1) to a son or daughter of a member of the armed forces or merchant navy who lost his or her life during, or as a direct result of, hostilities in the War of 1939-45; or (2) to the son or daughter of a member of the said forces or merchant marine who was seriously incapacitated either physically or mentally; or (3) to the son or daughter of any man or woman who served in any of Her Majesty's or Allied forces during 1939-45. Failing the receipt of applications from the above-mentioned groups, consideration will be given to applications from (4) sons or daughters of native or naturalized Canadians domiciled in Alberta.

This scholarship is available to matriculants or undergraduates.

Applications should be made by August 1.

Province of Alberta Matriculation Scholarships (The Queen Elizabeth Education Scholarship Fund)—The Province of Alberta, under the students Assistance Act, has made possible the establishment of three hundred matriculation scholarships of \$100 each to bona fide residents of Alberta. The basis of award is academic attainment provided that the average mark of senior matriculation shall be at least 75%. The scholarships are tenable in the first year at the University of Alberta or in a course of university level at a Junior College affiliated with the University. They are also tenable at an approved college or university when the course being taken is of university level and is not available at the University of Alberta.

The amount of the scholarship may be increased according to the financial need of the student, to a maximum which may in some cases be as high as \$1,250. Application may be made for the basic \$100 without evidence of financial need. If the application is for more than \$100, the form must be filled in completely in order to indicate the amount of financial need.

Apply by August 10. Applications received after August 10 will be considered in order of receipt if 300 have not already been received. Application must be made on the Provincial Government form.

The Alberta Hotel Association Scholarship—Forty-three scholarships of \$500.00 each and 20 of \$250.00 each are offered to matriculants from Alberta High Schools entering the University of Alberta in Edmonton or Calgary or in a course of University level at a Junior College affiliated with the University of Alberta. The scholarships of \$250.00 are intended for students who can secure their desired course without leaving their home city. The basis of award is academic standing in Grade XII and financial need.

Application forms may be secured from The Alberta Hotel Association, Credit Foncier Bldg., 10275 Jasper Avenue, Edmonton, and should be completed and returned by August 1.

The Alberta Institute of Agrologists Scholarship in First-Year Agriculture, valued at \$250.00, will be awarded annually to an applicant from either an Alberta high school or a provincial school of agriculture on the basis of scholastic standing.

Applications should be made by August 1.

The Alberta Motor Transport Association Bursaries—A number of bursaries will be provided annually to matriculants from Alberta High Schools to enter any degree or diploma program at the University of Alberta, Edmonton or Calgary, or a program of University level at a Junior College affiliated with the University. The values will be up to \$500.00 if the student must live away from home or up to \$300.00 if the student is able to live at home.

The basis of award will be academic standing and financial need. A reasonable geographical distribution within the Province will be made.

Apply to the Administrator of Student Awards by August 1.

The Alberta Wheat Pool Bursaries for Rural Students—Two bursaries of \$500.00 a year are offered annually to two students from Alberta high schools, one to a student whose home is in the southern half of the province and one to a student whose home is in the northern half of the province. While applications will be considered from students registered in any undergraduate degree program, preference will be given to candidates entering the Faculty of Agriculture. The amount of \$500.00 will be paid to each recipient during each of the undergraduate years up to and including five years, provided that he or she maintains an average standing of not less than 65% in each year. These bursaries are open to students whose parents are engaged in farming and who derive their income mainly from farming. The award will be made on the basis of a satisfactory record in the Grade XII examinations for complete senior matriculation, and of the need for financial assistance. In applying for one of these bursaries the Wheat Pool's field service personnel should be used for reference.

For the purposes of this award the southern half of the province shall be defined as that part of Alberta inclusive of and south of township 44.

Applications should be made by August 1.

MATRICULATION AWARDS

The Alberta Wheat Pool Scholarships of the value of \$200.00 each are offered annually to three students of outstanding merit entering the first, second and third years of Household Economics at the University of Alberta. These scholarships are available to students who have been members of 4H Homemaking Clubs.

Applications must be submitted to the Supervisor of 4H Clubs, Provincial Department of Agriculture, Edmonton, by August 1.

The Viscount Bennett Scholarships—The late Right Honorable Viscount Bennett, P.C., K.C., LL.D., D.C.L., of Calgary and Mickelham, founded a trust to support scholarships open to students who have resided for at least five consecutive years in Calgary, or within twenty miles of that city, or in Banff National Park.

Twelve scholarships of \$300.00 each are available for competitive award on the basis of academic attainment, good character and satisfactory personal qualities. The scholarships may be held in any year or program, but at least three will be reserved for matriculants.

Applications from matriculants should be made by August 1.

The William Asbury Buchanan Bursary of \$100.00 from a trust created by the will of the late Senator William Asbury Buchanan will be awarded to a student whose home is in the Lethbridge Public School District, the Lethbridge Separate School District or the Lethbridge School Division on a basis of academic standing, financial need and extra-curricular activities. The award is tenable at Lethbridge Junior College or the University of Alberta.

Applications should be made by August 1.

The Calgary Men's Canadian Club Scholarship of \$100.00 is awarded to a male student from a Calgary high school entering the University of Alberta, Calgary. The award will be made on the basis of Grade XII standing and financial need.

Apply to the Administrator of Student Awards by August 1.

The Calgary Herald Scholarship in Engineering of \$1,000.00 (or \$1,100.00 in the event of the winner being a former Calgary Herald Carrier) will be awarded, on the basis of the matriculation standing, to a student entering Engineering at the University of Alberta whose home is in that part of Alberta south of a line from Rocky Mountain House to Red Deer to Coronation, who matriculates from a school in that area. The award will be paid in instalments of \$300.00 (or \$400.00—see above), \$300.00, \$200.00, \$200.00 at the beginning of the four academic years, provided that the holder's average in the first, second and third years shall not fall below 75%.

Applications should be made by August 1.

The Calgary Herald Scholarship in Classics. A scholarship of \$500.00 is offered to a matriculant who proposes to enter the Honors Classics program at the University of Alberta, Calgary. This scholarship will be awarded on the basis of the matriculation examination in Latin. Additional consideration would be given to an applicant who has Greek 100.

In case no suitable candidate presents himself in any year the scholarship may be awarded on the results of the first year's work in Honors Classics at the University in Calgary.

Applications should be made by August 1.

The Calgary Underwriters Association Bursary of the value of \$150.00 is offered annually to a student of outstanding merit from a high school in the Calgary area, entering the first year of any program of study offered at the University of Alberta, Calgary. The financial need of the applicants will be considered.

Applications should be made by August 1.

The Canadian Bechtel Limited Bursary in Engineering valued at \$600.00 is awarded annually on the basis of financial need and of matriculation standing to a matriculant from an Alberta high school entering the first year of Engineering at the University of Alberta.

Applications should be made by August 1.

Canadian Fina Oil Scholarships—A number of scholarships of \$700 each will be awarded, with priority to Division A.

Division A covers Company employees and children or wards of such to enter any undergraduate program at any recognized university. These awards are renewable to a maximum of four years providing satisfactory academic standing is maintained. Under this Division completed application forms should be returned to Canadian Fina Oil Scholarship Committee, 736 - 8th Ave. S.W., Calgary, Alberta, by July 1.

Division B covers matriculants from High Schools in Alberta or Saskatchewan to enter the University of Alberta or the University of Saskatchewan in Engineering, Geology or Geophysics. Matriculants must apply in their year of High School graduation. The award will be made on a basis of academic standing (not less than 70%) and financial need and will be for one year only. Consideration may be given to undergraduates already in any of the listed programs. Under Division B application for the University of Alberta should be made to the Administrator of Student Awards by August 1.

The donor will, in addition, provide a grant-in-aid of \$250 to the University for each scholarship holder.

Canadian Mathematical Congress Scholarships in Mathematics.

The Friends of the Canadian Mathematical Congress Scholarships, one of the value of \$500.00 and one of the value of \$350.00.

The Nickle Foundation Scholarship in Mathematics of the value of \$400.00.

The Haddin, Davis and Brown Limited Scholarship of the value of \$250.00.

These scholarships will be awarded to students who have taken all of their Grade XII work at an Alberta high school, have obtained satisfactory standing in this work (including Mathematics 30 and 31), and are entering the first year of a degree program at the University. The awards will be made primarily on the basis of special competitive examination in mathematics to be set and marked by the Department of Mathematics and to be written early in May.

The first Scholarship of the Friends of the Canadian Mathematical Congress is to be paid to the over-all winner in this competition.

These scholarships may be taken in any degree program. The Nickle Foundation Scholarship in Mathematics is tenable only at the University of Alberta. The others are tenable at the University of Alberta or any other Canadian University.

Candidates should apply direct to their High School Principal by March 15. Principals will forward the names to the Department of Mathematics, University of Alberta, Edmonton, by March 31.

MATRICULATION AWARDS

The Canadian Superior Oil Ltd. Bursary is offered to a male Canadian citizen entering the first year of a program in Chemistry, Geology, or Engineering at the University of Alberta. The bursary will cover tuition fees and books for a four year period and may also include a subsistence allowance if deemed necessary.

The award will be made on a basis of grade XII standing and financial need. A change in program from any of the above three, or failure to maintain a satisfactory academic standing will entail forfeiture of the bursary.

Apply to the Administrator of Student Awards by August 1.

The City of Calgary Matriculation Scholarships—Seven scholarships of \$500.00 each are offered annually by the City of Calgary to Calgary matriculation students entering first year university in any faculty. The awards will be made on the basis of proficiency and financial need. The students will be given free choice in selection of university to be attended.

Written application setting forth the financial ability of the home and other pertinent information should be received by the City Clerk, Calgary, by August 1 on the forms available at the Office of the City Commissioner, Calgary.

The City of Medicine Hat Scholarship—a scholarship of \$500.00 will be offered annually by the City of Medicine Hat, on the basis of academic standing and financial need to a student, either male or female, who wishes to attend the University of Alberta. This scholarship will be available to a student matriculating into the University and is not restricted to any faculty. This student must have attended a Medicine Hat School from Grade VII to Grade XII. The student's parents must have resided in Medicine Hat during this period. The award will be payable in two instalments, the first applicable to fees at the time of registration, the second payable after the successful completion of the first term's work.

Written application should be received by the City Clerk, City Hall, Medicine Hat before August 1. Application forms are available at the office of the City Clerk or the City Comptroller's office, City Hall, St. Theresa Academy and Medicine Hat High School.

The Civil Service of Alberta Bursaries—Up to ten bursaries of a maximum of \$500.00 a year are offered annually to first year University students from Alberta high schools. These students must be the children of provincial civil servants, retired provincial civil servants or deceased provincial civil servants. The bursaries are confined to matriculants and the amount of \$500.00 will be paid to each recipient who finds it necessary to live away from home while \$250.00 will be paid to each recipient who can attend the chosen course while living at home. These bursaries are tenable at the University of Alberta in Edmonton or Calgary or in a program of university level at a Junior College affiliated with the University. The awards will be made with due regard to geographic distribution. Some are tenable at the Institutes of Technology, Calgary or Edmonton.

Application forms may be obtained from the Executive Secretary, Civil Service Association of Alberta, Alberta Jasper Bldg., 9815 Jasper Ave., Edmonton, and should be completed and returned to him not later than July 31.

Cominco Undergraduate Scholarships—The Consolidated Mining and Smelting Company of Canada offers annually two four-year awards of \$1,400, payable at \$350 per annum, and four one-year awards of \$300, to matriculants who are sons, daughters or wards of (1) a Cominco employee; (2) a widow whose husband died while regularly employed by Cominco; or (3) a Cominco pensioner or his widow. Applicants must attain an average of at least 75% in the subjects of senior matriculation or the equivalent.

Applications are due June 1, and further information and application forms may be obtained from the Secretary, Scholarship Committee, The Consolidated Mining and Smelting Company of Canada Limited, Trail, British Columbia.

The E.I.C. Wives Club of Calgary Scholarship of \$100.00 is awarded to a deserving first year Engineering student of the University of Alberta, Calgary, with high entrance standing and who receives no other major award.

The Federated Pipe Lines Ltd. Scholarship of \$500 is offered annually to a student of outstanding academic merit entering the first year of any Faculty of the University of Alberta. The scholarship is subject to renewal for three further years or until graduation whichever is less, providing a satisfactory academic standing is maintained.

Apply to Administrator of Student Awards by August 1.

The Friends of the University Matriculation Bursaries—The Friends of the University have provided two bursaries of \$150.00 each, open to students from high schools in Alberta other than those in the City of Edmonton, the City of Calgary or within twenty miles of that city, or in the Banff National Park. To be eligible for this bursary the student must have completed the grades from ten to twelve in not more than four years. The award will be made on the basis of a satisfactory record in the Grade XII examinations for complete senior matriculation and of the need for financial assistance.

Applications should be made by August 1.

General Motors Scholarship—Beginning with the autumn of 1955, General Motors of Canada Limited will offer annually one matriculation scholarship to an outstanding student who is entering any course at the University of Alberta. The scholarship may be renewed up to a maximum of four years, providing the recipient maintains a high standard of scholarship (at least 75%). Should the student's scholarship fall below the desired standard the award may be transferred to another qualified candidate who is a member of the same class.

The size of the award will be determined by the recipient's financial need, and may vary from \$200.00 to \$2,000.00 per year. A grant-in-aid of \$500.00 for each scholarship will be paid to the University.

The award is open to any young man or young woman who is a citizen of Canada. The basis of award will be high scholastic standing, personal qualities and financial need. A General Motors Scholar may not hold any other major award.

Applications should be made by August 1.

The Imperial Order Daughters of the Empire Matriculation Bursaries—The Provincial Chapter of Alberta, Imperial Order Daughters of the Empire, has provided four bursaries for matriculating students, known as the Coronation Bursaries, of the value of \$750.00 each. These are tenable at the University of Alberta and are each made in three yearly payments. Two of the bursaries are reserved for children of men or women who served overseas with the British forces during the Great Wars. All candidates must have resided in the province of Alberta for at least three years prior to application and must not be more than nineteen years of age as at September 1 of the year the award is made. The provincial educational secretary of the Imperial Orders Daughters of the Empire will notify the high schools in February of each year, of the impending award, all applications to be in her possession by June 1. Further information and application blanks may be obtained from Mrs. C. B. Linton, 11418 - 101 St., Edmonton, Alberta.

MATRICULATION AWARDS

The Imperial Order Daughters of the Empire Second War Memorial Matriculation Bursaries—A number of bursaries for matriculating students are offered annually by the Imperial Order Daughters of the Empire as part of the 1939-45 War Memorial. They are tenable at any University in Canada. At least one bursary will be awarded in each Province and one in the Yukon, provided there are suitable candidates. The awards are of the value of \$1,600.00, i.e. \$400.00 a year for four years; \$500.00 each in the first and second years and \$600.00 in the third of a three year course; \$350.00 in the first, \$300.00 in the second, third and fourth years and \$350.00 in the fifth year of a five year course. The continuation of the award is subject to the holder's passing the examinations of each year and satisfying the Provincial Committee of Selection of his or her continued fitness to retain the Bursary.

An application, which must be submitted not later than April 1, must include certified evidence to the fact that the candidate is the son or daughter of a deceased or permanently and seriously disabled member of the Services of the Second World War. Consideration will also be given to the applicant's general record and standing in school, physical fitness and circumstances of the family.

Further information and application blanks may be obtained from the provincial educational secretary, Mrs. C. B. Linton, 11418 - 101 St., Edmonton, Alberta.

The Imperial Order Daughters of the Empire Lethbridge Municipal Chapter Bursary of the value of \$500.00 is offered annually to a matriculant in memory of the veterans of both World Wars. This bursary is tenable at the University of Alberta or at Lethbridge Junior College and is payable over a period of three years: \$200.00 the first year, \$150.00 each year for the second and third years. The bursary is open to application from children of men or women who served with the Canadian or British Armed Forces during either the First or Second World Wars, and who have attended a Lethbridge High School for at least two years prior to making application. The Lethbridge Municipal Education Secretary will notify the High Schools in October of each year of the impending award, all applications to be in her possession by May 1. Further information and application blanks may be obtained from Mrs. Owen Williams, Municipal Education Secretary, Lethbridge Municipal Chapter, I.O.D.E., 532 - 15 St., South, Lethbridge, Alberta.

The Inco Scholarship of \$300 plus fees (total not to exceed \$700) will be offered annually to a matriculant of outstanding merit who is entering first year at the University of Alberta in Engineering, Geology, Physics, Geophysics or Mathematics. The scholarship is renewable to a maximum of four years providing the holder maintains satisfactory standing (75% or in the top 20% of the class).

The Keith Stationers Ltd. Bursary of \$400 will be offered annually to a matriculant entering the first year of the Faculty of Commerce, University of Alberta, Calgary, on a basis of Grade XII standing and of financial need. The student's home must be in that portion of the province inclusive of and south of Red Deer.

Apply to Administrator of Student Awards by August 1.

The Masonic Bursaries of \$500 each are offered by the Grand Lodge of Alberta, AF and AM, to students from Alberta High Schools to attend the University of Alberta, or a Junior College affiliated with the University or any other recognized University if the program of studies is not available at the University of Alberta. A variable number up to a maximum of sixteen may be given. A limited number of these may be renewable, conditional on continued financial need.

MATRICULATION AWARDS

Apply to the Grand Secretary, Grand Lodge of Alberta, AF & AM, 330 12th Ave. S.W., Calgary. Application forms must be completed and returned by April 30.

The Melton Real Estate Limited Scholarship of the value of \$350.00 will be offered annually to a student with high scholastic standing from an Alberta High School who is entering first year Faculty of Commerce, University of Alberta.

Applications should be made by August 1.

The Nickle Foundation Matriculation Scholarship of \$1,000.00 is offered annually to a Grade XII student, from any Metropolitan Calgary High School, entering any Canadian university within two years of receiving this award. Those eligible will be the recipients of the Nickle Foundation Grade Eleven Deferred Bursaries in the previous year and their alternates. Selection will be made by the Nickle Foundation Selection Committee.

The scholarship will be paid in four annual instalments of \$250.00 provided the student maintains a satisfactory academic level.

The North Calgary Business and Professional Women's Club Bursary of \$50.00 is offered to a woman student entering the first year of the Bachelor of Education program at the University of Alberta, Calgary. She must be under 21 years of age (at date of registration), have taken Grade XII in a Calgary High School north of the Bow River and have an average in Grade XII of at least 70%. The financial need of the student will be considered in making the award.

Applications should be made by August 1.

The Pacific Resins Ltd. Customers' Scholarship, of \$300, is offered to a student entering the first year at the University of Alberta in Chemistry, Chemical Engineering, or the Secondary B.Ed. Route provided he is majoring in Mathematics or Science.

The award will be made on the basis of the student's high-school record, financial need, and the extent of his participation in extra-curricular activities. Depending upon the holder's record during the first year, the company may decide to renew his scholarship.

Applications should be made by August 1.

The Peace River Pioneer Memorial Bursaries, provided by Mr. Charles Plavin of North Star, Alberta, may be awarded to High School graduates whose homes lie north of Township 68 and west of the 5th Meridian in the Province of Alberta and who are proceeding into first year of the University of Alberta or of any institution of university level affiliated with the University and located in the above area. The awards may be variable in amount and will be made on a basis of high academic standing and financial need.

Apply to Administrator of Student Awards by August 1.

The Royal Canadian Legion Scholarship, valued at \$400.00 is offered by the Dominion Command of the Royal Canadian Legion, B.E.S.L., for study in a degree program at the University of Alberta on the basis of scholastic ability and financial need, and according to the following priorities: (a) to a son or daughter of a member of the armed forces or merchant navy who lost his or her life during, or as a direct result of, hostilities in the War of 1939-45; or (b) to the son or daughter of a member of the said forces or merchant marine who was seriously incapacitated either physically or mentally; or (c) to the son or daughter of any man or woman who served in any of Her Majesty's or Allied forces during 1939-45. Failing the receipt of applications from the above-mentioned groups, consideration will be given to applications from (d) sons or daughters of native or naturalized Canadians domiciled in Alberta.

MATRICULATION AWARDS

Preference will be given to matriculants or to students who have completed the first year at University.

Applications should be made by August 1.

The St. Hilda's Matriculation Scholarships—Two scholarships of \$300 each are provided annually by the St. Hilda's Trust Fund for women students entering the first year of the Faculty of Arts and Science at the University of Alberta, Calgary.

Preference will be given to any applicant who is a graduate of St. Hilda's School for Girls or a descendant of any such graduate, or of a graduate of St. Hilda's College. Applicants with these qualifications must state so in a separate letter attached to the regular university scholarship application form.

Apply to the Administrator of Student Awards by August 1.

The Robert David Sinclair Scholarship in First-Year Agriculture — A scholarship of \$150.00 in memory of Robert David Sinclair, late Dean of the Faculty of Agriculture, is offered by his family to a student entering first year in the Faculty of Agriculture.

The scholarship is open to students from schools of agriculture and high schools in Alberta and will be awarded on the basis of scholastic standing.

Applications should be made by August 1.

The Society of Exploration Geophysicists Scholarships — The Society offers annually four scholarships of \$500.00 each to Canadians majoring in Geophysics at Universities in Canada. The award will be based on academic record and financial need. Applicants may be matriculants entering first year University or undergraduates or graduate students.

Application forms may be secured from Canadian Society of Exploration Geophysicists Scholarship Sub-committee, P.O. Box 117, Calgary, Alberta, and should be returned completed to the same address by March 15.

The Steel Company of Canada Bursary of \$500 per annum is offered annually to a student entering first year at the University of Alberta, in any degree or diploma course. The bursary will be renewed each year for four years or until the student has completed his or her course whichever is less, provided a satisfactory academic standing is maintained. The financial need of applicants is to be considered. Applicants must be permanent Canadian residents. In addition a grant-in-aid of \$500 per annum in respect of each bursary will be paid to the University.

Applications should be made by August 1.

The Robert Tegler Matriculation Scholarships—The Robert Tegler Trust has provided three matriculation scholarships which are awarded annually to the three matriculating students, from the high schools in the city of Edmonton, having the highest average standing in the regular examinations covering the subjects for complete matriculation (Grade XII). To be eligible for one of these scholarships a student must be a British subject and have completed the grades from ten to twelve inclusive in not more than four years, with an average mark of at least 80% in all subjects considered as the bases of award. He must also have carried out the work of these three grades in the Province of Alberta and at least the Grade XII work in an Edmonton high school.

The scholarships provide for three full year's fees in any faculty at the University of Alberta. Any student holding one of these scholarships must make at least second-class standing in order to be eligible for the scholarship during the succeeding year.

Applications should be made by August 1.

The Robert Tegler Special Scholarships—The Robert Tegler Trust has provided two special scholarships of tuition fees plus \$300.00 for handicapped students, tenable in any faculty to which the students can be admitted, and available to new students or continuing undergraduates. While due weight will be given to the academic record of candidates, special consideration will be given to their background, financial need, nature of handicap, personal qualities, and other relevant points.

The scholarships may be awarded to the same students a second time, or even throughout the whole undergraduate course.

Applications should be made by August 1.

The University Women's Club of Edmonton Scholarship of \$500.00 is awarded annually to a woman student of outstanding merit registered in a degree program at the University of Alberta. It may be held concurrently with any other award or awards and will be given to the woman student with the highest average standing (at least 85%) in the June matriculation examinations (Grade XII) in Alberta who by accepting it will not forfeit any other award (or portion thereof) of an equal or greater value than this scholarship. It is payable \$300.00 in the first year, and \$200.00 in the second year, provided that she obtains at least 75% in her first year.

Application should be made by August 1.

The Union Carbide Scholarship having a maximum value of \$2,500.00 is offered annually to a male matriculant who will be entering the Faculties of Commerce or Engineering or the Physical Sciences of the Faculty of Arts and Science (i.e. B.Sc. programs in Chemistry, Geography, Geology, Mathematics or Physics) and who intends, after graduation, to enter business, industry or education. The amount will be payable \$700.00 during the first year and \$600.00 in each subsequent year. The student must maintain an average of at least 65% to continue to be eligible. The student should not be in receipt of other monetary scholarships exceeding \$200.00 in any one year. The award will be made on the basis of a satisfactory High School standing but financial need will also be considered.

Application should be made by August 1.

The Hon. W. C. Woodward Scholarship of \$500.00 per year is offered annually in competition, to sons, daughters and legal dependents of full-time employees, or retired employees, and of employees who died while in the service of Woodward Stores (Edmonton) Limited. It is open to matriculants entering any degree course at the University of Alberta. The bases of award will be scholastic standing in the required subjects of senior matriculation in Alberta or equivalent standing as accepted by the University of Alberta, activity and interest in youth organizations, and outstanding qualities of citizenship, leadership and service.

The scholarships will be renewable each year up to a maximum of five years of undergraduate study, provided that the holder's academic standing and general conduct are satisfactory to the University.

Application forms are available from the Personnel Department of any Woodward Department Store and should be completed and returned to the same Department by July 15.

UNDERGRADUATE AWARDS — GENERAL

The following prizes, scholarships and bursaries are available to students in more than one faculty of the University:

University of Alberta Honor Prizes—The Board of Governors of the University offers annually a prize to the value of \$50.00 to each undergraduate student in a degree or diploma program, who, in the work of the preceding year at the University of Alberta, or at a Junior College affiliated with the University, obtained an average standing of at least 85%. This includes students in the graduating year who return to the Universities for further studies.

University of Alberta First Class Standing Prizes—The Board of Governors of the University offers annually a prize to the value of \$25.00 to each undergraduate student in a degree or diploma program, who, in the work of the preceding year at the University of Alberta, or at a Junior College affiliated with the University, obtained an average standing from 80% to 85%. This includes students in the graduating year who return to the University for further studies.

Province of Alberta Undergraduate Scholarships (The Queen Elizabeth Education Scholarship Fund)—The Province of Alberta, under the Students Assistance Act, has made possible the establishment of three hundred undergraduate scholarships of \$100 each to bona fide residents of Alberta. The basis of award is academic attainment provided that the average mark of the previous year shall be at least 75%. The scholarships are tenable at the University of Alberta. They are also tenable at an approved college or university when the course being taken is of university level and is not available at the University of Alberta.

The amount of the scholarship may be increased according to the financial need of the student, to a maximum which may in some cases be as high as \$1,250. Application may be made for the basic \$100 without evidence of financial need. If the application is for more than \$100, the form must be filled in completely in order to indicate the amount of financial need.

Apply by or before June 30. Application must be made on the Provincial Government form.

University of Alberta War Memorial Scholarships—The War Memorial Fund of the University of Alberta will provide one or more scholarships of \$650.00 to be awarded for study in a degree program at the University of Alberta on the basis of scholastic ability and financial need and according to the following priorities: (1) to a son or daughter of a member of the armed forces or merchant navy who lost his or her life during, or as a direct result of, hostilities in the War of 1939-45; or (2) to the son or daughter of a member of the said forces or merchant marine who was seriously incapacitated either physically or mentally; or (3) to the son or daughter of any man or woman who served in any of Her Majesty's or Allied forces during 1939-45. Failing the receipt of applications from the above-mentioned groups, consideration will be given to applications from (4) sons or daughters of native or naturalized Canadians domiciled in Alberta.

The scholarship is available to matriculants or undergraduates.

Apply by August 1.

The Royal Canadian Legion Scholarship, valued at \$400.00 is offered by the Dominion Command of the Royal Canadian Legion, B.E.S.L., for study in a degree program at the University of Alberta on the basis of scholastic ability and financial need, and according to the following priorities: (a) to a son or daughter of a member of the armed forces or merchant navy who lost his or her life during, or as a direct result of, hostilities in the War of 1939-45; or (b) to the son or daughter of a member of the said forces or merchant marine who was seriously incapacitated either physically or mentally; or (c) to the son or daughter of any man or woman who served in any of Her Majesty's or Allied forces during 1939-45. Failing the receipt of applications from the above-mentioned groups, consideration will be given to applications from (d) sons or daughters of native or naturalized Canadians domiciled in Alberta.

Preference will be given to matriculants or to students who have completed the first year at University.

Apply by August 1.

The Viscount Bennett Scholarships—The late Right Honorable Viscount Bennett, P.C., K.C., LL.D., D.C.L., of Calgary and Mickelham, founded a trust to support scholarships open to students who have resided for at least five consecutive years in Calgary, or within twenty miles of that city, or in Banff National Park.

Twelve scholarships of \$300.00 each are available for competitive award on the basis of academic attainment, good character and satisfactory personal qualities. The scholarships may be held in any year or program, but at least three will be reserved for matriculants.

Applications from undergraduates should be made by June 15.

The Robert Tegler Special Scholarships—The Robert Tegler Trust has provided two special scholarships of tuition fees plus \$300 for handicapped students, tenable in any faculty to which the students can be admitted, and available to new students or continuing undergraduates. While due weight will be given to the academic record of candidates, special consideration will be given to their background, financial need, nature of handicap, personal qualities, and other relevant points. The scholarships may be awarded to the same students a second time, or even throughout the whole undergraduate course.

Apply by August 1.

The City of Calgary Undergraduate Scholarships—Two scholarships of \$500.00 each are offered annually by the City of Calgary to Calgary students entering the second year at any approved university. The awards will be made on the basis of proficiency and financial need.

Written application setting forth the financial ability of the home and other pertinent information should be received by the City Clerk, Calgary, by June 13 on forms available at the office of the City Commissioner, Calgary.

The Faculty Women's Club, Calgary, Prize of \$15.00 will be awarded annually to the student with the highest academic standing of the second year in any Faculty of the University of Alberta, Calgary.

The Glendale Kiwanettes of Calgary Scholarship of \$100.00 is offered annually to a student of outstanding academic merit completing the first year of any Faculty at the University of Alberta, Calgary.

UNDERGRADUATE AWARDS

The Renkenberger Scholarship of \$250, provided under the will of the late Harvey Renkenberger of Barons, Alberta, will be awarded to an undergraduate student in the Faculties of Agriculture, Arts and Science, Education or Commerce who is especially interested in co-operative marketing. The basis of award will be academic standing and participation in relevant extra-curricular activities. The recipient should include in this program a senior course in economics preferably related to agriculture or marketing.

Apply to Administrator of Student Awards by June 15.

The P. Lawson Travel Ltd. Summer Scholarships. In order to promote greater understanding and good will between Canadians and other peoples, one or more scholarships of approximately \$1,000.00 each are offered each year to students from the University of Alberta, Calgary, for summer study in Europe. Certain countries may be specified by the donor. Preference will be given to students studying languages and who intend to pursue a teaching career in Alberta. Awards will not be made to students who have already travelled in, or whose native tongue is the same as, the stipulated country.

The award will be based on (a) academic standing, (b) community work, (c) extracurricular achievements and (4) financial need.

Apply by December 1.

The Proctor and Gamble Company Bursaries, of a total amount RR

The Proctor and Gamble Company Bursaries, of a total annual value of \$1500 are provided to assist undergraduates of any faculty who are in need and have adequate academic standing (at least 65%). In addition the Company provides an annual grant of \$600 to the University.

Apply to the Administrator of Student Awards by June 15.

The Samuel J. McCoppen Bursaries of a total annual value of \$1,500.00 are provided under the will of the late Samuel J. McCoppen for undergraduates who have completed the first or second year at the University of Alberta. The basis of award will be financial need and academic standing.

Apply by June 15.

The IBM-Thomas J. Watson Memorial Bursaries of a total annual value of \$1,000.00 are provided by International Business Machines Company Limited for undergraduates in any year or faculty who are in need of financial assistance and who have an academic standing of at least 65%. In addition, the donor provides an annual grant-in-aid of \$500.00 to the University.

Apply to the Administrator of Student Awards by June 15.

N.F.C.U.S. Interregional Exchange Scholarships—By arrangement between certain Canadian universities undergraduate or graduating students may apply for a year's study at another university in a region other than that in which the student is attending. The four regions are: Western English, Central, French Central and Atlantic. Applicants must be bona fide students who have completed at least one year of university work beyond complete senior matriculation. They may return to their home university after the exchange year or remain at their own expense. Successful candidates will be accorded remission of tuition fees for the exchange year. Travel assistance will be provided by N.F.C.U.S. (through a grant from Canada Council). Academic standing and extra-curricular activities will be considered.

Application forms may be had from the Calgary N.F.C.U.S. campus representative and must be filed by January 15.

The German Academic Exchange Scholarship is offered annually by the Federal Republic of Germany to a student from the University of Alberta. Applicants must have completed at least two years university work, be between 20-30 years of age, and be fluent in the German language.

The scholarship is tenable for 12 months beginning September 1 at a University or at an Academy of Art or Music. The scholarship covers tuition fees, partial travel costs and living allowance.

Apply by January 15 so that completed applications may be in Ottawa by February 1.

The French Government Bursary — The government of the French Republic offers annually to a graduating student a bursary to provide for study at a French university. There is no restriction on field of study provided the candidate has an adequate knowledge of French. The award is for one academic year and covers tuition fees, a living allowance and sea passage from France to Canada at the conclusion. The award is made by the Cultural Counsellor of the French Embassy in Ottawa, on the nomination of the University.

Apply by March 15.

The Calgary Musical Club Prize of \$50 will be awarded annually to a student in Music at the University of Alberta, Calgary, who in the opinion of the Music Department at Calgary has made an outstanding contribution to the musical life of the University. Financial need may be taken into consideration.

The Malcolm G. Taylor and The Violet Taylor Trophies are awarded annually to outstanding students in Intra-mural Debating and Drama.

Prizes and scholarships available in the various faculties at Calgary are listed below according to faculty.

THE FACULTY OF ARTS AND SCIENCE

The Governor-General's Gold Medal is awarded by His Excellency, the Governor-General, to the graduating student in an honors program from the Faculty of Arts in Edmonton or the Arts portion of the Faculty of Arts and Science in Calgary, who has shown the highest distinction in scholarship.

The Lieutenant Governor's Gold Medal is awarded by His Honor, the Lieutenant Governor of Alberta, to the graduating student in an honors program from the Faculty of Science in Edmonton or the Science portion of the Faculty of Arts and Science in Calgary, who has shown the highest distinction in scholarship.

The Faculty of Arts and Science Gold Medals, provided by an anonymous donor, are awarded annually to the graduating student in the general B.A. program and the graduating student in the general B.Sc. program of the Faculty of Arts and Science who have shown the highest distinction in scholarship.

The Board of Governors of the University Scholarship of the value of \$100.00 is awarded to the student with the highest standing in the first year in Arts and Science at Calgary, provided that an average of not less than 75% be obtained on the work of the year.

The President's Scholarships—Three scholarships of \$350.00 each were endowed in 1943 by Standard Investments Limited through the late Mr. Justice H. H. Parlee. The scholarships are open to undergraduates in the Faculty of Arts and Science and Faculty of Law. Proficiency in studies is the primary basis of award, and no award will be made to a student with less than 80%. Preferably these three awards will be given, one in a B.A. program, one in a B.Sc. program and one in Law. If the number of well qualified candidates exceeds the number of scholarships available, financial need will be taken into account in making the awards.

Apply by June 15.

The Hamilton Watch Company Award consisting of an engraved watch and a certificate will be awarded annually to a student of outstanding merit graduating from a B.Sc. Honors program of the Faculty of Arts and Science. The achievements of the student—either academic or extra-curricular—in the Social Sciences or Humanities will be considered in making this award.

The Great Books Awards will be awarded annually to two graduating students from the Faculty of Arts and Science at the University of Alberta, Calgary; one to a B.Sc. graduate with high standing in arts courses and one to a B.A. graduate with high standing in science courses. These awards are donated by Encyclopedia Britannica of Canada Ltd. and each consists of a 54-volume set of the Great Books of the Western World.

The Aluminum Company of Canada, Limited Scholarship of the value of \$500 is offered annually to an undergraduate student in Engineering, Commerce, Law or Honors Arts and Science. The award will be based on academic standing, financial need and general character of the applicant, and may be held by the same student more than once. In addition the Company will provide a grant-in-aid of \$200 to the University.

Apply by June 15.

The Kenneth William Moodie Scholarship — As a memorial to her nephew, Flying Officer Kenneth William Moodie, a graduate in science of the University of Alberta who lost his life in May, 1942, while on operations, the late Miss Marion E. Moodie made provision in her will for an annual scholarship of \$150.00 to a student of outstanding merit entering the first year of the Faculty of Medicine or the third year of the B.Sc. program in the Faculty of Arts and Science. The basis of award will be academic attainment on the previous year's standing at the University of Alberta, financial need and evidence of satisfactory personal qualities.

Apply by June 15.

The St. Hilda's Undergraduate Scholarship of \$400 is provided annually by the St. Hilda's Trust Fund for a woman student of outstanding merit completing the first year and entering the second year of the Faculty of Arts and Science at the University of Alberta, Calgary.

Preference will be given to any applicant who is a graduate of St. Hilda's School for Girls or a descendant of any such graduate, or of a graduate of St. Hilda's College. Applicants with these qualifications must state so in a separate letter attached to the regular university scholarship application form. If no such candidate applies the award may be given to any woman student who fulfills the other conditions.

Apply by June 15.

The University Women's Club of Calgary Scholarship of \$200.00 tenable at the University of Alberta is open to women students at the University of Alberta, Calgary who have completed the first year of Arts and Science. To be eligible for the scholarship a student must have an average of at least 75% on the year's work.

The Society of Arts and Science, Calgary, Scholarships—The Society will offer one or more scholarships of \$150.00 each, annually to an outstanding student or students who are members of the Society and who are enrolled in the Faculty of Arts and Science at the University of Alberta, Calgary. The basis of award will be (a) academic standing, (b) contribution to extra-curricular life on the campus, and (c) financial need. The award will be dependent on returning to the Calgary campus for the following academic year.

Recommendations will be made by the Executive of the Society.

Awards in Departments

(Note: Awards in specified courses are open to students of other faculties registered in these courses.)

Biochemistry

The Society of Chemical Industry Merit Awards—Three awards will be made annually consisting of a gold key bearing the crest of the Society and a year's subscription to "Chemistry and Industry." The awards will be made to the student graduating with the highest standing in each of Honors Chemistry, Honors Biochemistry and Chemical Engineering, provided an average of 75% is attained in the final year and that the course has been completed in the normal number of years.

ARTS AND SCIENCE AWARDS

Botany

The J. E. Olsen Prize of the value of \$35.00, is offered to the graduating student who has taken the highest average mark in two or more senior botany courses, provided that the student's general record is satisfactory to the Faculty Council.

The Kiwanis Club of South West Calgary Prize of \$50.00 will be awarded to a student at the University of Alberta, Calgary, for outstanding merit in Agriculture or Botanical Science.

Chemistry

The Professor Osman James Walker Memorial Scholarship of \$100 is awarded annually to the student selected by the Department of Chemistry who is graduating from the University of Alberta in the general or honors program and who will be proceeding to graduate work in the Department of Chemistry at the University of Alberta. Applications for this award must be received by the Department before May 1.

In the event that no suitable applicant is selected, the award will go to the student graduating with the highest record in the fourth year of the honors chemistry program.

The Cave and Company Ltd., Scholarship in Chemistry of the value of \$150 is awarded annually to a student selected by the Department of Chemistry who is graduating from the University of Alberta in the general program or honors program or in Chemical Engineering, and who will be proceeding to graduate work in the Department of Chemistry at the University of Alberta. Applicants for this award must be received by the Department before May 1.

In the event that no suitable applicant is selected, the award will go to the student in the third year of the honors Chemistry program, with the highest academic standing.

The Society of Chemical Industry Merit Awards—Three awards will be made annually consisting of a gold key bearing the crest of the Society and a year's subscription to "Chemistry and Industry." The awards will be made to the student graduating with the highest standing in each of Honors Chemistry, Honors Bio-chemistry and Chemical Engineering, provided an average of 75% is attained in the final year and that the course has been completed in the normal number of years.

The Chemical Institute of Canada Prize in Chemistry of the value of \$25.00 in books is awarded annually to the student in Honors Chemistry who obtains the highest standing in the work of the third year, provided that the student's general record is satisfactory to the Faculty Council.

The Paul Edward Macleod Memorial Prize in Chemistry of the value of \$25.00 was provided by the late Mrs. J. E. A. Macleod, Calgary, in memory of her son, who died while a student of the university. The award will be made to the student obtaining the highest standing in organic chemistry (Chemistry 250), in Calgary, provided the student otherwise secures a standing satisfactory to the faculty council and is carrying a full year's work.

Classics

The Ahepa Prize in Greek—A prize of \$50.00 is offered by the Anglo-Hellenic Association in Western Canada to the student in Greek 200 or Greek 300 who secures the highest standing in a special examination in sight translation from English to Greek and from Greek to English, subject to the provision that the prize be granted to the successful candidate only if he or she continues in a course in senior Greek in the year immediately subsequent to the year in which the prize is won. If there is no suitable candidate from Greek 200 or Greek 300, the Department of Classics may at their discretion award the scholarship to a student in other courses in Greek.

English

The Rutherford Memorial Gold Medal—is offered in memory of the late Honorable Alexander Cameron Rutherford, and is open for competition to students in the graduating year who attain first class standing in honors English.

The Calgary Herald Prize in English 240, of \$50.00 is awarded to a student in the University in Calgary for outstanding merit in English 240 providing the student secures first class standing in English 240 and is carrying a full year's work in which his standing is satisfactory to the faculty council.

Beta Sigma Phi, Canadian Chapter offers annually three scholarships of \$1,000.00 each, one of which is restricted to the Western Canada region. The scholarships will be tenable in the fourth year of an Honors Course in English. They will be awarded at the end of the third year on a basis of academic accomplishment and a confidential assessment of the student's ability by his or her teachers in English courses.

Apply to The Secretary, Canadian Universities Foundation, 75 Albert Street, Ottawa 4, Ontario, by June 1.

Entomology

The Entomological Society of Alberta Prize—An annual prize of \$50.00 is offered by this Society to the student obtaining the highest standing in one or more senior courses in the Department of Entomology. The award is conditional on a satisfactory general record.

Fine Arts

The Alberta Piano Company Scholarship in Music of \$100.00 is offered annually to a student of outstanding merit completing the first or second year of a Music program at the University of Alberta, Calgary.

The Lerner Scholarship in Drama—A scholarship of \$100.00 is offered annually by Mr. A. I. Lerner, in memory of his son, Irving Lerner. It is awarded to a student of outstanding merit enrolled in Drama 350 (Advanced Acting). To be eligible, a student must be majoring in Drama in the Faculty of Arts and Science or Education. The payment of this scholarship will be contingent upon the student's entering a further year of training in drama either at the University of Alberta or at another recognized college or university.

ARTS AND SCIENCE AWARDS

Geography

The Canadian Association of Geographers' Book Prize—An award will be granted annually to the graduating student who has specialized in Geography and who has demonstrated the greatest proficiency in this subject.

The Alberta Geography Prize of \$25.00 in books and a one-year student membership in the Canadian Association of Geographers is offered annually by Mr. Donald C. Lofquist, M.A., to be awarded to the freshman student receiving the highest mark in Geography 201, in Edmonton or Calgary, provided the student is carrying a full year's work and passes in all other subjects.

Geology

The Association of Professional Engineers of Alberta Gold Medal in Geology is offered to the student with the highest general standing in the final year of Geology. This award may be given to a student graduating in either the three-year general course or the four year honor course, provided that an average standing of at least 75% is attained.

The Dome Petroleum Limited Scholarship of \$500.00 is offered annually to a student of outstanding academic merit entering the third year of an Honors program in Geology at the University of Alberta. The student must have attained 75% or better in his second year.

The Socony Mobil Oil of Canada Ltd. Scholarship in Geology, consisting of a scholarship of \$400 to the student selected and a grant of \$400 to the Department in which the student is registered, is offered to a student entering the third year in honors geology in the Faculty of Arts and Science upon the basis of outstanding merit in his previous academic record, and evidence of initiative and good character.

The California Standard Company Geological Scholarship, valued at \$400.00 is offered annually by the California Standard Company to a student of outstanding merit entering the final year in geology or geological engineering who is interested in oil exploration or production. Preference will be given to a male Canadian citizen.

Apply by June 15.

The John A. Allan Memorial Scholarship in Geology of the value of \$200.00 is offered annually by the Association of Professional Engineers of Alberta in memory of Professor John A. Allan. The award will be made to the student who obtains the highest average standing in all the prescribed courses of first year Geology.

The Alberta Society of Petroleum Geologists' Prize in Stratigraphy is offered annually by the Alberta Society of Petroleum Geologists to the undergraduate student, who, in the opinion of the Department of Geology, has made the most progress in the study of stratigraphic geology. The prize will consist of a copy of "The Western Canada Sedimentary Basin" and a gift certificate entitling the recipient to his selection of the Society's publications to the value of \$50.00.

The George E. Cole Memorial Prize in Economic Geology of \$25.00 is offered annually by Mrs. Janet C. Cole in memory of her late husband, a former President of the Canadian Institute of Mining and Metallurgy, to the student obtaining the highest standing in Geology 460, provided that the student obtains at least 75% in the subject and is registered in a full year's program.

History

The Hudson's Bay Company Scholarship in History, valued at \$300.00 is awarded to a student of outstanding merit who is entering the third or fourth year of the honors History program. A special condition of the award is that a senior or honors course in Canadian History must be included in the program of study.

Apply by June 15.

The John Henry Stanley Memorial Prize, of the value of \$25.00 in books, is offered annually by Dr. George F. G. Stanley in memory of his father to be awarded annually to the student standing highest in Canadian History, provided this student is taking a full year's work and passes all other subjects.

The Gordon Stanley Fife Memorial Prize, of the value of \$25.00, is offered by Professor A. L. Burt, the University of Minnesota, in memory of his former colleague, to be awarded to the graduating student who has taken the highest average mark in two or more senior history courses.

The George Malcolm Smith Memorial Prize of the value of \$25.00 in books is offered annually by Professor Emeritus M. H. Long in memory of his former colleague, to be awarded to the student standing highest in Modern European History provided that this student takes first-class standing in the course, is carrying a full year's work and passes in all his other subjects.

The Trenholme Dickson and Letitia S. Dickson Prize of \$35.00 is awarded to the student with the highest standing in the field of Canadian History, provided such student has a first-class average in that subject and maintains an otherwise satisfactory standing.

The Morden Heaton Long Prize, of the value of \$25.00, is offered annually by his friends. It will be awarded to the student with the highest standing in British History, provided that this student takes a first-class standing in the course, is carrying a full year's work and passes in all his other subjects.

The Calgary Canadian Club History Prize of \$25.00 is awarded to the student who achieves the best record in any History course given at the University of Alberta, Calgary, provided that the student is registered in a full program of studies, that his mark in History is not lower than 75% and that he does not qualify for another award in the same subject.

Mathematics

The A. Wyman Memorial Gold Medal in Mathematics is offered by the family of the late Mr. Wyman to the student in the graduating year of the honors program in Mathematics who secures the highest average standing, provided that the student shall have registered in a full year's program and shall be recommended for the award by the Department of Mathematics.

Smalley's Radio Ltd. Bursary in Arts and Science of the value of \$500.00 is offered annually by Smalley's Radio Ltd. of Calgary to a student completing first year and continuing on to second year at the University of Alberta, Calgary in Honors Physics or Honors Mathematics. The award will be based on scholastic standing and financial need.

Apply by June 15.

The Cyril G. Wates Memorial Prize of \$50.00, offered by Mrs. Wates, will be awarded to a student of outstanding merit in Astronomy 253 or 410. The award will be based on the record in these courses only.

ARTS AND SCIENCE AWARDS

The Mary Wyman Memorial Prize in Mathematics to the value of \$25.00 in books is offered by the family of the late Mrs. Wyman to the student with the highest standing in Mathematics 211 in Calgary, provided that the student's general record is satisfactory to the Faculty Council.

Modern Languages

The Aristide Blais Prize in French—A prize of \$25.00, the gift of Senator Blais, is to be awarded annually to an undergraduate fluent in the French language who obtains the highest first-class standing in French 360 or 400. The prize may not be awarded to the same student more than once, and in the event of a student qualifying for the prize a second time it may be awarded by reversion to another student with first-class standing in French 360 or 400.

The Belgian Government Prize of books is offered to the senior student who has the best record in French 360 or 370, providing that the student's record is satisfactory to the Faculty of Arts and Science.

The Minister of Switzerland's Book Prize in French is offered to the student who obtains the highest standing in French 375 or 380, provided that the student secures standing which is satisfactory to the Faculty Council.

The Bronze Medal in French, offered by the French Consul in Edmonton will be awarded to the winner of an essay competition to be held by the Modern Languages department.

The French Government Book Prize will be awarded to the student with the highest standing in French 200, providing such student's record is satisfactory to the Faculty Council.

The Beauchemin Prize in French valued at \$25.00 is offered by Dr. L. O. Beauchemin to the student attending the University in Calgary who achieves the highest standing in French 200, providing such student's record is satisfactory to the Faculty Council concerned.

The German Government Prizes in books are offered annually to the two senior students with outstanding merit in German 370 and 400 or 450, whichever is offered, provided that these students obtain an average of not less than 75% in these courses, are carrying a full year's work and have a record satisfactory to the Faculty Council. A prize may not be awarded to the same student more than once.

Philosophy

The MacEachran Gold Medal in Philosophy, offered by Professor Emeritus J. M. MacEachran, will be awarded to the student in the Department of Philosophy graduating with Honors in Philosophy or Philosophy and Greek with the highest standing in the last two years of the course. The medal will be awarded only if the student obtains First Class Honors.

Physics

The Sam Fefferman Memorial Gold Medal in Honors Physics is offered by the family of the late Mr. Fefferman to an outstanding student in the graduating year of the honors program in Physics. The student must have registered in a full year's program, obtain first class honors in Physics, and be recommended for the award by the Department of Physics.

The Association of Professional Engineers of Alberta Gold Medal in Geophysics is offered to the student with the highest standing in the final year of Geophysics, provided that an average of at least 75% is attained.

ARTS AND SCIENCE AWARDS

Smalley's Radio Ltd. Bursary in Arts and Science of the value of \$500.00 is offered annually by Smalley's Radio Ltd. of Calgary to a student completing first year and continuing on to second year at the University of Alberta, Calgary in Honors Physics or Honors Mathematics. The award will be based on scholastic standing and financial need.

Apply by June 15.

The California Standard Company Geophysical Scholarship, valued at \$400 is offered annually by the California Standard Company to a student of outstanding merit who is entering the third year of honors Physics and Geology, or Engineering Physics (Geophysics option) and who is interested in oil exploration or production. Preference will be given to a male Canadian citizen.

Application forms may be secured from Canadian Society of Exploration Geophysicists Scholarship Sub-committee, P.O. Box 117, Calgary, Alberta, and should be returned completed to the same address by March 15.

The Society of Exploration Geophysicists Scholarships — The Society offers annually four scholarships of \$500.00 each to Canadians majoring in Geophysics at Universities in Canada. The award will be based on academic record and financial need. Applicants may be matriculants entering first year University or undergraduates or graduate students.

The Royal Canadian Legion Scholarship in Physics or Electrical Engineering of \$400 is offered annually in the field of Physics or Electrical Engineering.

The terms of award are otherwise the same as for the Royal Canadian Legion Scholarship—see under General Awards.

Apply by June 15.

The Northern Electric Undergraduate Scholarship, which provides an amount not exceeding \$500 to cover tuition and general fees and the cost of books for one year, is awarded annually to a student of outstanding merit who is proceeding into the second, third and fourth year of Electrical Engineering, Engineering Physics or Honors Physics. The applicant must be a Canadian citizen or a landed immigrant and must normally have secured an average of at least 75% on the work of the preceding university year. Students who have held the scholarship previously are free to apply for renewal of the award.

Apply by June 15.

Political Economy

The Duncan Alexander MacGibbon Gold Medal in Political Economy is awarded to the student registered in the department as an honors student in either Economics or Political Science who receives the highest average standing in four courses in either Economics or Political Science. In the case of Economics, one of the courses must be in economic theory, and in the case of Political Science, one of the courses must be in political theory.

Psychology

The MacEachran Gold Medal in Psychology, offered by Professor Emeritus J. M. MacEachran, will be awarded to the student in the Department of Psychology, graduating in the B.A. or B.Sc. course with Honors in Psychology with the highest standing in the last two years of the course. The medal will be awarded only if the student obtains First Class Honors.

ARTS AND SCIENCE AWARDS

Sociology

The Samuel M. Strong Gold Medal and Prize in Sociology, in memory of the late Dr. Strong, will be awarded to the student in the Department of Sociology graduating with Honors in Sociology with the highest standing in the last two years of the course. The medal will be awarded only if the student obtains First Class Honors.

Zoology

The William Rowan Memorial Scholarship of \$100.00, in memory of the late Dr. Rowan, former head of the Department of Zoology, will be offered annually to a student of outstanding merit entering the fourth year of the Honors Zoology program.

THE FACULTY OF AGRICULTURE

The Alberta Institute of Agrologists Gold Medal is offered annually primarily on the basis of scholarship as shown in the two senior years in the undergraduate courses in Agriculture, the weighted average in all subjects to be not less than 75%. Consideration will be given as well to qualities of leadership, personality and character.

The Board of Governors of the University Scholarship of the value of \$100.00 is awarded on the basis of the work of the first year in Agriculture, provided that an average of not less than 75% be obtained on the work of the year.

The Dan Baker Undergraduate Bursary of \$300 is provided under the will of the late Dan Baker of Edmonton. It may be awarded to a student entering second, third or fourth year of the Faculty of Agriculture on a basis of academic standing, financial need and personal character.

Apply to the Administrator of Student Awards by June 15.

The Douglas Farquhar Johnston Bursaries in Agriculture of the value of \$500.00 each are offered annually to two students entering the final year of the Faculty of Agriculture. Preference will be given to students in the Department of Animal Science. The awards will be based on academic standing and financial need.

Apply by June 15.

The Alberta Dairywomen's Association Scholarship in Dairy Science of the value of \$500.00 is open to undergraduates who have completed the second year in the Faculty of Agriculture and who are registered in a special program in the Department of Dairy Science. The award will be for scholarship attainment during the first two university years with a two year average of not less than 65%. The scholarship may be renewed during the fourth year for continued meritorious work.

The Alberta Dairywomen's Association Summer Work Awards. Two awards of the value of \$150 each are available annually to students who express an intention to specialize in Dairy Science and who, within the previous three years, have completed a summer's work in the dairy industry. These awards are available to students entering the first, second and third years in Agriculture.

The Alberta Provincial Milk and Cream Producers' Association Scholarship of \$250.00 is offered to a student completing the second year of the Faculty of Agriculture and entering the Department of Dairy Science in the third year. The award will be for scholarship attainment during the first two years with a two-year average of not less than 65%.

The J. K. Sutherland Memorial Scholarship of the value of \$100.00 is offered in memory of Mr. and Mrs. Sutherland of Hanna, Alberta, by the Board of F.U.A. District No. 11 and other interested persons. It is to be awarded to a student of outstanding merit completing the third year of the Faculty of Agriculture in the University of Alberta, provided that an average of at least 70% has been obtained in that year.

The Canada Packers Scholarship, valued at \$500, is offered annually to a student entering the fourth year of Agriculture at the University of Alberta. While preference may be given to a student majoring in a field of general interest to the packing industry, all students with high stand- in the work of the third year will be eligible.

AGRICULTURE AWARDS

The Canadian Feed Manufacturer's Association (Alberta Division) Scholarship valued at \$150.00. This scholarship is to be made available to a third year student in Agriculture who has decided to major in nutrition in the Department of Animal Science and who has enrolled in an appropriate option in the third year. The scholarship is to be awarded to the eligible student who has the highest weighted average in courses completed during his second year in the Faculty of Agriculture.

The Alberta Branch of the Canadian Seed Growers' Association Scholarship valued at \$150.00. This scholarship is made available to a third year student in Agriculture who has decided to major in the Department of Plant Science and who has enrolled in an appropriate option in the third year. The scholarship is to be awarded to the eligible student who has the highest weighted average in courses completed during his second year in the Faculty of Agriculture.

The Robert Gardiner Memorial Undergraduate Scholarship of \$100.00 offered by the United Farmers of Alberta in memory of the late Robert Gardiner, will be awarded to the student standing highest in the third year in the Faculty of Agriculture. A weighted average of 75% in all subjects will constitute the minimum scholastic requirement. In addition to academic standing, consideration will be given to qualities of leadership, personality and character.

The scholarship is open only to students from farm homes; preference will be given to students born in Alberta.

The Alberta Horticultural Association Scholarship of \$100 will be awarded annually to a student of outstanding merit entering the 3rd or 4th years of the Department of Plant Science and specializing in Horticulture.

The Ketchum Prize in Animal Science, valued at \$50.00, is offered by the Ketchum Manufacturing Co. Limited of Ottawa. It will be awarded to a student majoring in Animal or Poultry Husbandry for outstanding merit in the work of the third year in the Faculty of Agriculture.

The Entomological Society of Alberta Prize—An annual prize of \$50.00 is offered by this society to the student obtaining the highest standing in one or more senior courses in the Departmental of Entomology. The award is conditional on a satisfactory general record.

The Kiwanis Club of South West Calgary Prize of \$50.00 will be awarded to a student at the University of Alberta, Calgary, for outstanding merit in Agriculture or Botanical Science.

The Western Canadian Society for Horticulture Prize of \$25.00 will be awarded annually to the graduating student with the best record in horticulture during the final two years, providing the student's record is considered satisfactory by the Faculty Council.

THE FACULTY OF COMMERCE

The T. Eaton Company Gold Medal in Commerce is awarded annually to the graduating student who receives the highest standing in the courses of the final two years, providing the student's record is considered satisfactory by the Faculty of Commerce.

The Winspear, Hamilton Anderson and Company Scholarship of the value of \$500.00 is offered annually to a student at the University of Alberta proceeding to the degree of Bachelor of Commerce in Accounting for outstanding merit in the courses of the first and second years. The scholarship will be paid in two equal instalments; the first on registration in the third year and the second on registration in the fourth year. Payment of the second instalment is subject to the student obtaining an average of at least 70% in the courses of the third year.

The Dominion Stores Limited Scholarship of the value of \$500.00 is offered annually to a student at the University of Alberta proceeding to the degree of Bachelor of Commerce in Finance for outstanding merit in the courses of the first and second years. The scholarship will be paid in two equal instalments; the first on registration in the third year and the second on registration in the fourth year. Payment of the second instalment is subject to the student obtaining an average of at least 70% in the courses of the third year.

The Hudson's Bay Scholarship in Commerce (provided jointly by the Edmonton and Calgary stores) of the value of \$500.00 is offered annually to a student at the University of Alberta proceeding to the degree of Bachelor of Commerce in Marketing for outstanding merit in the courses of the first and second years. The scholarship will be paid in two equal instalments; the first on registration in the third year and the second on registration in the fourth year. Payment of the second instalment is subject to the student obtaining an average of at least 70% in the courses of the third year.

The Industrial Acceptance Corporation Limited Scholarship of the value of \$500.00 is offered annually to a student at the University of Alberta proceeding to the degree of Bachelor of Commerce (General Course) for outstanding merit in the courses of the first and second years. The scholarship will be paid in two equal instalments; the first on registration in the third year and the second on registration in the fourth year. Payment of the second instalment is subject to the student obtaining an average of at least 70% in the courses of the third year.

The Frederick Charles Manning Memorial Scholarship of \$250.00 is offered in memory of their father by Mrs. F. Armour (Manning) Ford, Alberni, B.C., Mr. F. C. Manning, Calgary, Alberta, and Mr. A. H. Manning of Calgary, Alberta. The scholarship will be awarded on a basis of academic merit and extracurricular activities to a student completing the first or second year of the Faculty of Commerce at Calgary. The recipient will be expected to continue in the Faculty at Calgary if his program is available there.

The Aluminum Company of Canada, Limited, scholarship—See details under Faculty of Arts and Science, Honors Courses.

The Scholarship of the Western Daily Newspaper Advertising Managers' Association of the value of \$100.00 is offered annually to a student of outstanding merit entering the third year of the Bachelor of Commerce program in Marketing based on the work of the first and second years. It is expected that such a student will have a primary interest in Advertising.

COMMERCE AWARDS

The Institute of Chartered Accountants of Alberta Scholarship of \$150.00 will be awarded annually to a student of outstanding merit entering the third year of the Bachelor of Commerce Program in Accounting based on the results of the first and second years at Calgary.

The Clarkson, Gordon and Co. Prize of \$50.00 will be awarded annually to a student entering the second year in the Faculty of Commerce based on the results of Accounting 200 of the first year providing the student's record is otherwise satisfactory to the Faculty.

The Christenson, Morrison and Co. Scholarship of the value of \$300.00 is offered annually to a student at the University of Alberta proceeding to the degree of Bachelor of Commerce in Accounting for outstanding merit in the courses of the first and second years. Character and general ability of the student will also be considered. The scholarship will be paid in two equal instalments; the first on registration in the third year and the second on registration in the fourth year. Payment of the second instalment is subject to the student obtaining an average of at least 70% in the courses of the third year.

The T. Eaton Co., Ltd., Edmonton, offers two book prizes as follows:

A prize of books to the student securing the highest standing in the courses of the first year.

A prize of books to the student securing the highest standing in the courses of the second year.

In both instances the award will be subject to the student's record being considered satisfactory by the Faculty of Commerce.

The Calgary Personnel Association Prize of \$50.00 will be awarded annually to the student in the Faculty of Commerce with the highest standing in Personnel 302 or 410, provided his record is otherwise satisfactory to the Faculty Council.

The Riddell, Stead, Graham and Hutchison Scholarship of \$300 will be awarded annually to a student of outstanding merit entering the final year of the program towards a Bachelor of Commerce in Accounting, who has indicated an intention to proceed into chartered accountancy after graduation. The Faculty will make the selection on a basis of academic record and personal suitability for the profession.

The Touche, Ross, Bailey & Smart Scholarship of \$300 will be awarded annually to a student of outstanding merit entering the final year of the program towards a Bachelor of Commerce in Accounting who has indicated an intention to proceed into chartered accountancy after graduation. The Faculty will make the selection on a basis of academic record and personal suitability for the profession.

THE FACULTY OF EDUCATION

The Clarence Sansom Memorial Gold Medal in Education is offered annually by the Alberta Teachers' Association to the student who has shown highest general proficiency in the final year of the Bachelor of Education program.

The Board of Governors of the University Scholarship of the value of \$100.00 is awarded on the basis of the work of the first year in Education, at Calgary provided that an average of not less than 75% be obtained in the work of the year.

The University Scholarships in Education of \$100.00 each are offered to three students of outstanding merit completing the second year of the Elementary route of the Bachelor of Education program and proceeding in the immediate next session into third year. The student must have attained an average of 75%.

Alberta Teachers' Association Scholarships to Students in Education—Four scholarships, in honor of Honorary Life Members of the Association, in the amount of \$500 each, are offered annually by The Alberta Teachers' Association to intramural students proceeding from the third to the fourth year of the Bachelor of Education program. The applicants for these scholarships must be bona fide residents of Alberta. Each must have a minimum average of 70 per cent and must give evidence of intention to follow teaching as a career. The scholarships are payable upon registration for intramural study in the fourth year of the Bachelor of Education program, Faculty of Education, University of Alberta, provided that study is continued at the next regular session of the University of Alberta following the award.

Apply to the Executive Secretary, Alberta Teacher's Association, Barnett House, Edmonton, by May 15.

Alberta Teachers' Association Scholarships to Teachers in the Field—Four scholarships, in honor of Honorary Life Members of the Association, each in the amount of \$500, are offered annually by The Alberta Teachers' Association to teachers in the field who, having completed three years of training and holding a permanent Alberta teaching certificate, are proceeding to the fourth year in the Bachelor of Education program. Applicants for these scholarships must be bona fide residents of Alberta, must have a minimum average of 70 per cent, and must give evidence of intention to follow teaching as a career. The scholarships are payable upon registration for intramural study in the fourth year of the Bachelor of Education program, Faculty of Education, University of Alberta after the award is made.

Apply to the Executive Secretary, Alberta Teachers' Association, Barnett House, Edmonton, by May 15.

The Crown Zellerbach Canada Limited Scholarships in Education of \$500.00 each are offered annually to two Canadian students of outstanding merit who hold an undergraduate degree from the University of Alberta (either Edmonton or Calgary) and who are proceeding towards a Bachelor of Education degree. One scholarship will be tenable at Edmonton and one at Calgary.

Apply by June 15.

Century Geophysical Corporation of Canada, Scholarship in Education of \$500.00 is offered annually to the student graduating with highest standing in Physics or Mathematics in Calgary or Edmonton and who is proceeding toward a Bachelor of Education degree in Calgary.

Apply by June 15.

EDUCATION AWARDS

The Lerner Scholarship in Drama—A scholarship of \$100.00 is awarded to a student of outstanding merit enrolled in Drama 350 (Advanced Acting). See under Faculty of Arts and Science, Department of Fine Arts.

The P.E.O. Southern Alberta Scholarship in Education, of \$150.00, tenable at the University of Alberta, is open to the woman student at the University of Alberta, who achieves the best record in the first or second year of the Bachelor of Education program. To be eligible a student must have an average of at least 70% in the year's work and a generally satisfactory performance.

The Olive M. Fisher Prize of \$50.00 is offered by Dr. Olive M. Fisher to a woman student at the University of Alberta, Calgary for outstanding merit in practice teaching in the second year of the B.Ed. program, Elementary Route, provided that her course of studies has not been interrupted by a year or more of teaching in schools.

Calgary Gyro Club Scholarship in Education of the value of \$400.00 is offered annually to a student of outstanding merit who holds an undergraduate degree from the University of Alberta and who is proceeding towards a B.Ed. degree in Calgary.

PROVINCIAL ASSISTANCE FOR TEACHER EDUCATION

Second Year Bachelor of Education program.

Students enrolled in the second year of the Bachelor of Education program may apply to have one-half of their tuition fees paid. Tuition fees consist of University of Alberta instruction fees only.

Students in receipt of such grants shall undertake to render one year of teaching service in Alberta for each grant received. This service shall be made immediately on receipt of a teaching certificate unless the student proceeds to further training. Default of such undertaking shall make the grant or grants repayable to the Province.

Apply to the Chairman, Students Assistance Board, Department of Education, Administration Building, Edmonton.

Third and Fourth years of a Bachelor of Education Program.

A maximum of fifty tuition grants may be awarded in each of the third and fourth years of the Bachelor of Education program. Recipients of tuition grants shall undertake to render one year of teaching service in Alberta in public or separate schools, for each grant received. This service shall be rendered immediately following the completion of the fourth year, or of the third year if the student does not enrol for the fourth year immediately following the completion of the third year. In the event of failure to render such teaching service the grant shall become a debt payable to the Province of Alberta.

Apply to the Chairman, Students Assistance Board, Department of Education, Administration Building, Edmonton, by August 31.

Tuition Grants for Graduates of other Faculties or other Universities

Tuition grants may be granted by the Government of Alberta to graduates of the University of Alberta or of other universities. The applications will be considered by a Selection Committee which may base its recommendations on factors relating to suitability for teaching as well as academic standing. Candidates must elect a program of teacher education in the Faculty of Education at the University of Alberta, leading to certification to teach at the high school level, and must undertake to teach at the junior or senior high school level in the public or separate school system of Alberta for one year following the completion of a year of training in the Faculty of Education or to refund the grant.

Apply to the Chairman, Students Assistance Board, Department of Education, Administration Building, Edmonton.

Applications which must be accompanied by official transcripts, should be sent to the Dean, Faculty of Education, University of Alberta, Edmonton by August 31.

THE ALBERTA TEACHERS' ASSOCIATION LOANS

The Alberta Teachers' Association has established a fund to provide loans to teachers who hold a permanent Alberta Certificate and who are in need of financial assistance to continue their preparation as teachers through intramural study. Applications will normally be considered during the months of May and September. Application to be dealt with in May must be received by May 15. Applications to be dealt with in September must be received by August 31. Special applications may be considered during the University year.

If the loan fund is inadequate to meet all demands made upon it, priority will be given to applications in May. Inquiries and applications should be made to the Executive Secretary, Alberta Teachers' Association, Barnett House, Edmonton.

LOCAL SCHOOL BOARD ASSISTANCE

Some local School Boards provide grants or loans to students in teacher education programs. Students should inquire of their own principal or local School Board office.

THE FACULTY OF ENGINEERING

The Henry Birks and Sons, Limited Gold Medal is offered annually to a graduating student from the Faculty of Engineering on the basis of academic standing in the final two years (not less than 75%) and qualities of leadership and character.

The Association of Professional Engineers of Alberta Gold Medals are offered to one graduating student in each of the departments of chemical, civil, electrical, engineering physics, mechanical, metallurgical and mining engineering on the basis of individual talent, application and diligent study. For the purposes of this award the academic record of the third and fourth years is combined and a general average of at least 75% must be attained. The right is reserved to withhold the awarding of one or all of these medals if, in the opinion of the Faculty of Engineering, candidates do not show sufficient merit.

The Society of Chemical Industry Merit Awards. Three awards will be made annually consisting of a gold key bearing the crest of the Society and a year's subscription to "Chemistry and Industry." The awards will be made to the student graduating with the highest standing in each of Honors Chemistry, Honors Biochemistry and Chemical Engineering, provided an average of 75% is attained in the final year and that the course has been completed in the normal number of years.

(The following awards are listed alphabetically)—

The Aluminum Company of Canada, Limited, Scholarship—See details under Faculty of Arts and Science, Honors Courses.

The American Society for Metals Foundation Scholarship in Metallurgy, valued at \$500, will be given annually by the Foundation for Education and Research of the Society to a student who has completed his first or second year in Metallurgical Engineering. The award will be made on the recommendation of the Department of Mining and Metallurgy, based on the student's academic record and general ability, and will be paid after his registration in the following year of the Metallurgical Engineering course.

American Society for Testing Materials Prize Awards—Four prizes each consisting of a year's membership in the Society, a certificate, eight issues of the A.S.T.M. Bulletin and two books from a selected list on standards and materials, are offered annually to students in engineering on the basis of demonstrated ability and interest in the field of materials.

Prize winners are selected on the basis of their performance in courses in materials: Met.E. 252, Ch.E. 252, Met.E. 361 and C.E. 455; or on the basis of a summer report on a topic related to materials.

R. Angus (Alberta) Limited Scholarship in Highway Engineering of \$500.00 to be awarded annually to a student of outstanding merit entering fourth year Civil Engineering in the Highway Engineering Program. To qualify, the student must have taken a complete third year program in Civil Engineering at the University of Alberta and have attained an average of at least 75%.

Apply by June 15.

The Association of Professional Engineers of Alberta Scholarship of \$200.00 is offered annually to a student of outstanding merit completing the first year and entering the second year of the Faculty of Engineering at the University of Alberta, Calgary.

The Board of Governors of the University Scholarship of the value of \$100.00 is awarded annually to a student of outstanding merit entering the second year of Engineering, provided that an average of not less than 75% has been obtained on the work of the first year.

The British American Paint Company Scholarship in Engineering of \$500 is awarded annually to a student of outstanding merit entering the second year of the Faculty of Engineering. The award will be based on the work of the first year.

The California Standard Company Scholarship in Engineering of \$400 is offered annually to a student of outstanding merit who is entering the final year of Chemical or Mechanical Engineering and who is interested in oil exploration or production. Preference will be given to a male Canadian Citizen.

Apply to Administrator of Student Awards by June 15.

The California Standard Company Geophysical Scholarship, \$400.00 is offered annually to a student of outstanding merit who is entering the third year of honors Physics and Geology or Engineering Physics (Geophysics option), and who is interested in oil exploration or production. Preference will be given to a male Canadian citizen.

Apply by June 15.

The Canada Cement Company Scholarships—Two scholarships, each of the value of \$500.00 are offered annually to students of outstanding merit, one entering third year Civil Engineering and one entering third year Mechanical Engineering, at the University of Alberta, to be based on the work of the second year. To qualify a student must have completed a second year program of normal weight at the University of Alberta and have attained an average of at least 75%.

In the event that no student qualifies for one of the above, the award would be made available in the other department as a second award for that year.

The Canadian Construction Association Essay Prize of \$50.00 and an Engineer's Handbook will be awarded annually for the best essay on a subject related to construction, by a student in the final year of the Faculty of Engineering. Essays may be those requisite to the student's program or written specially. Selection will be made by the Faculty and the winning essay will then be eligible for a prize of \$100.00 on a Canada wide basis.

Essays to be submitted to the office of the Dean of Engineering by April 15.

The Cave and Company Ltd. Scholarship in Chemistry—Refer to details under Faculty of Arts and Science, Department of Chemistry.

The Chemical Institute of Canada Prize in Chemical Engineering of the value of \$25.00 in books is awarded annually to the student in Chemical Engineering who obtains the highest standing in the work of the third year, provided that the student's general record is satisfactory to the Faculty Council.

The C.I.S.C. Scholarship in Structural Engineering of the value of \$300 will be awarded annually by the Alberta Regional Committee of the Canadian Institute of Steel Construction to a student of outstanding merit entering fourth year Civil Engineering, preferably in the Structural Engineering option. To qualify, the student must have taken a complete third year program in Civil Engineering at the University of Alberta and have attained an average of at least 75%.

ENGINEERING AWARDS

The George E. Cole Memorial Prize in Economic Geology of \$25.00 is offered annually by Mrs. Janet C. Cole in memory of her late husband, a former President of the Canadian Institute of Mining and Metallurgy, to the student obtaining the highest standing in Geology 460, provided that the student obtains at least 75% in the subject and is registered in a full year's program.

The A. Crisall Memorial Scholarship of \$100.00 is available for award annually to students of outstanding merit in Drafting 151 in first year Engineering. To be considered, the student must have passed all courses of the full first year, and have a general average of not less than 75%.

The Dow Chemical Scholarship in Chemical Engineering, consisting of a scholarship of \$500 to the student selected and a grant of \$250 to the Department of Chemical and Petroleum Engineering, is offered annually by Dow Chemical of Canada Limited to a student of outstanding merit on the basis of his academic record in the third year of Chemical Engineering and his interest in the Chemical Engineering Club of the University of Alberta and in student affairs generally. The Scholarship is tenable at the University of Alberta in the fourth year of Chemical Engineering.

Engineering Institute of Canada Prize for Third-Year Students in Engineering—The Engineering Institute of Canada offers a prize of \$25.00, open for competition to university students in Engineering following all of the prescribed courses in chemical, civil, electrical, mining, or mechanical engineering.

To be eligible a student must be a member of, and active in, such a students' organization as the Engineering Students' Society, the Mining and Geological Society, the Chemistry Club, the Students' Branches of the American Institute of Electrical Engineers, the Institute of Radio Engineers or the Engineering Institute of Canada.

The recommendations for award shall be made, after the final examinations of the year, by a committee to be appointed by the Dean of Engineering at a faculty meeting in the session.

The bases of award shall be: (a) the average mark for the courses assigned to that year, this is no case to be less than 75%, and (b) the value of services rendered to a students' engineering organization of the University.

The Gas Companies Undergraduate Scholarship in Engineering of \$750.00 each are offered annually by Northwestern Utilities Limited and Canadian Western Natural Gas Company Limited to two students on the basis of academic achievement in the second year of the Engineering program. These scholarships are tenable in the third year of the Engineering program at the University of Alberta.

The Sam J. Gorman Memorial Bursary in Engineering of the value of \$300.00 is offered by his executors to a student who has completed the second year of any branch of Engineering at the University of Alberta. The award will be based upon high scholastic standing in the work of the year just completed and upon evidence of financial need.

Apply by June 15.

The Johnston Testers Limited Scholarship of the value of \$500 is offered to a student of outstanding merit entering the third year of Chemical or Mechanical Engineering who intends to elect the undergraduate courses in Reservoir Mechanics as part of his fourth year program. The award will be based on the work in the second year of Engineering at the University of Alberta.

Apply to Administrator of Student Awards by June 15.

The Douglas Farquhar Johnston Bursaries in Engineering of the value of \$500.00 each are offered annually to two students entering the fourth year of a program in Mining Engineering or Metallurgical Engineering. The awards will be based on academic standing and financial need.

Apply by June 15.

The James A. Lewis Engineering Scholarship in Petroleum Engineering, valued at \$500.00 is offered by James A. Lewis Engineering, Ltd. to a student entering the third year of Petroleum Engineering at the University of Alberta. Selection will be based on academic record in the second year of Engineering and on financial need.

Apply by June 15.

The John Alexander McDougall Memorial Scholarship in Civil Engineering of \$500 is offered annually to a student of outstanding merit entering the fourth year of Civil Engineering, based on the work of the third year.

The Northern Alberta Branch of the Canadian Institute of Mining and Metallurgy offers four prizes of \$15.00, one prize for the best student paper submitted during the term on each of the following subjects: (a) Mining, (b) Metallurgy, (c) Geology, and (d) Petroleum. To be eligible a student must be a member of the Mining and Geological Society of the University of Alberta. Recommendations for awards are to be made by each department concerned. The prize may be withheld if the papers submitted are not considered to be of sufficient merit to justify the awards.

The Northern Electric Undergraduate Scholarship which provides an amount not exceeding \$500 to cover tuition and general fees and the cost of books for one year, is awarded annually to a student of outstanding merit who is proceeding into the second, third or fourth year of Electrical Engineering, Engineering Physics or Honors Physics. The applicant must be a Canadian citizen or a landed immigrant and must normally have secured an average of at least 75% in the work of the preceeding university year. Students who have held the scholarship previously are free to apply for renewal of the award.

Apply by June 15.

The Oilfield Technical Society Prize—A Prize of \$100.00 is offered by the Oilfield Technical Society to the student in the fourth year of Chemical Engineering who, writing on some phase of the petroleum industry, obtains the highest grade for a "Report on Practical Experience" submitted in fulfilment of the requirements of Chemical Engineering 473.

The Jessie E. Paull Memorial Prize of the value of \$50.00 is awarded annually to the student obtaining the highest standing in C.E. 410 (Highway Engineering in the fourth year of civil engineering, provided the student obtains an average of at least 75% in this subject and is registered in a full year's program.

The R.C.E. Memorial Scholarship—The Royal Canadian Engineer Memorial Trust offers annually a scholarship to a student who has completed his third year in Engineering. Applicants must be members in good standing of the Officers' Training Corps and have had at least one summer's training with such unit. Award will be made on the basis of academic standing and qualities of leadership manifested in the activities of the Officers' Training Corps and in student affairs generally.

Apply by March 30.

The Royal Canadian Legion Scholarship in Physics or Electrical Engineering of \$400 is offered annually in the field of Physics or Electrical Engineering.

ENGINEERING AWARDS

The terms of award are otherwise the same as for the Royal Canadian Legion Scholarship—see General Awards.

Apply by June 15.

The Socony Mobil Oil of Canada Ltd. Scholarship in Engineering of \$400 is offered to a student who is entering the final year of Chemical or Mechanical Engineering and who will be enrolled in the Petroleum Engineering options, on a basis of academic standing and of good character and initiative. In addition the donor provides a grant of \$400 to the Department in which the student is registered.

Apply to Administrator of Student Awards by June 15.

Underwood, McLellan & Associates Limited Scholarship in Municipal Engineering of \$200.00 to be awarded annually to a student of outstanding merit entering fourth year Civil Engineering in the Municipal Engineering pattern. To qualify, the student must have taken a complete third year program in Civil Engineering at the University of Alberta and have attained an average of at least 70%.

Apply by June 15.

The John Wilcox Memorial Prize of the value of \$50.00 provided by the Petroleum Engineering Class '53, will be awarded annually to a student of outstanding merit, completing second or third year of Petroleum Engineering. General ability and financial need will be considered as well as academic standing. If no suitable candidate is found in Petroleum Engineering, the prize may be awarded in Chemical Engineering.

The Warren W. and Ida E. Prevey Memorial Gold Medal in Household Economics is offered by Dr. Esther and Miss Ruth Prevey in memory of their parents to the graduating student making highest standing in the work of the last two years of the course leading to the degree of B.Sc. in Household Economics, provided such student's standing is deemed satisfactory to the School of Household Economics.

The Russell Food Equipment Limited Scholarship of \$350.00 is offered annually to a suitable qualified student graduating from the School of Household Economics of the University of Alberta who is proceeding, either at this or any other approved university, in an M.Sc. program in Foods and Nutrition, or proceeding into a Dietetic Internship at an approved institution. The scholarship will be payable after registration in the selected program.

The Lorena Barfoot Prize of \$50.00 is offered annually to a suitably qualified student graduating from the School of Household Economics of the University of Alberta and who is proceeding into a Dietetic Internship at an approved institution. The Prize will be payable when the student has begun the Internship.

The Mabel Patrick Scholarship of the value of \$200.00 is awarded annually by the Alberta Home Economics Association to the student in Household Economics who takes the highest standing in the work as outlined for the first and second years, provided that the student passes all courses and obtains an average of not less than 75%.

The Annie Gertrude Tory Scholarship of the value of \$75.00 endowed to her memory by her husband, the late Henry Marshall Tory, first President of the University, is offered annually to the student in Household Economics who takes the highest standing in the work of the second year. The student must pass all courses and obtain an average of not less than 75% on the work of the year.

The Gretta Shaw Simpson Memorial Prize of the value of \$25.00 is offered annually by Miss Maimie S. Simpson in memory of her sister, formerly instructor in Bacteriology in this University. It is to be awarded to the student in Household Economics who takes the second highest standing in the work of the second year, provided that the student passes all courses and obtains an average of not less than 75%.

The Maria Isabel O'Connor Prize to the value of \$15.00 is offered annually in honor of the mother of the late Honorable G. B. O'Connor, Chief Justice of Alberta, to the student in second year Household Economics, who takes the highest standing in Household Economics 304, provided that the student has carried the full work of the second year and has a record satisfactory to the School of Household Economics.

The Phylis Osborne McGachie Bursary in Household Economics of the value of \$100.00 is available to a student completing the second year of the B.Sc. course in Household Economics. The award will be made on the basis of academic record, which must not fall below second class and of financial need.

Apply by June 15.

The Alberta Wheat Pool Scholarships of the value of \$200.00 each are offered annually to three students of outstanding merit entering the first, second and third years' of Household Economics at the University of Alberta. These scholarships are available to students who have been members of 4H Homemaking Clubs.

Applications must be submitted to the Supervisor of 4H Clubs, Provincial Department of Agriculture, Edmonton, by August 1.

THE SCHOOL OF PHYSICAL EDUCATION

The Alumni Gold Medal in Physical Education is offered by the Alumni Association of the University of Alberta to the outstanding graduating student in Physical Education, provided the student has been registered in a full year's program and has obtained an average of at least 75% in the final year.

The J. K. Campbell & Associates Limited Scholarships of \$150.00 and \$200.00 will be awarded annually to two students of outstanding academic merit completing the first and second years respectively in the school of Physical Education.

Recreation Scholarships—The Government of Alberta offers scholarships ranging from \$200 to \$500 to candidates wishing to take further training in Recreation. These scholarships are open to students entering their graduating year in Physical Education at the University of Alberta and to graduates of the University who have shown an active interest in Recreation through provision of leadership in that field, except to enter the Recreation profession in Alberta, show a high level of scholarship ability and possess high qualities of personality and character.

Apply to Department of Provincial Secretary, Cultural Activities Branch, 425, Legislature Bldg., Edmonton, Alberta, by March 31.

PROVINCE OF ALBERTA ASSISTANCE

Under the Students Assistance Act (The Queen Elizabeth Education Scholarship Fund) assistance in various forms is available to students at the University of Alberta in Edmonton and Calgary.

For matriculants and undergraduates this assistance is also available for attendance in a course of University level at a Junior College which is affiliated with the University of Alberta, or at an approved College or University elsewhere if the course is not given at the University of Alberta.

It is expected that students who might need financial assistance and whose homes are in Calgary or Edmonton will attend the campus in their home city if the program is available there.

For graduate study the assistance is available only for attendance in the Faculty of Graduate Studies at the University of Alberta.

Matriculants and undergraduates must be bona fide residents of Alberta.

Applicants must be full-time day students in a regular academic session.

PROVINCE OF ALBERTA ASSISTANCE

Province of Alberta Scholarships

There are 300 scholarships available for matriculants entering University who have a Grade XII average of 75% or better, and 300 to undergraduates with an average of 75% or better in the previous year.

These scholarships are for a basic \$100 for which application may be made without evidence of financial need. The amount may be increased according to a scale up to as high as \$1,250 on proof of financial need. If the application is for more than \$100 the form must be filled in completely in order to indicate the amount of the need.

Application should be made on the Provincial Government form.

Undergraduates should apply by June 30.

Matriculants should apply by August 10.

Applications after August 10 will be considered in order of receipt if 300 have not been already received.

Grants and Loans

These are available on a basis of financial need only. The amount of a grant depends on the academic standing of the previous year. A loan may be granted either in conjunction with, or separately from, a grant. Loans are repayable to the Provincial Government.

Matriculants must have an average of at least 60%.

Applications should be made to The Secretary, Students Assistance Board, Provincial Department of Education, Administration Building, Edmonton.

Undergraduates must have a previous year average of at least 60% for grants and at least 50% for loans.

Application should be made to the Administrator of Student Awards, University of Alberta, Edmonton, or to the Student Counselling Services Office, Calgary.

Students who anticipate that they will need financial assistance any time during the session should apply as follows:

Medicine and Dentistry—by September 15.

Other Faculties—by October 1.

However, further applications will be accepted up to January 6 from students who could not anticipate their needs earlier. Only in cases of emergency can applications be considered after January 6.

Applications from students with over 50% but repeating a full year will not be considered in the fall, but may be considered in the January group in which case mid-term examination results will be a determining factor.

Students should note that payment of Grants and loans will not be available for about eight weeks after the closing date for applications and should plan their financing accordingly, especially with reference to payment of fees.

Graduate Students must have an average of at least 65% for either grants or loans.

Apply to Administrator of Student Awards, University of Alberta, Edmonton, early in the fall session or in January.

OTHER FORMS OF ASSISTANCE

Assistance for Teacher Education

Special financial assistance is available in some years for Faculty of Education students.

For details refer to Province of Alberta Assistance under the Faculty of Education.

OTHER FORMS OF FINANCIAL ASSISTANCE

--*University Loan Fund*—Through the generosity of private donors the University has at its disposal a loan Fund from which loans may be made to students attending the University of Alberta, who could not otherwise complete their studies. In special circumstances loans may also be considered for Alberta students taking courses at an institution of University level elsewhere. Applicants must be making satisfactory academic progress. Interest at 5% per annum will be charged on loans. The money to establish this fund has been largely donated by Engineered Buildings, Limited, Calgary.

Apply to Students Counselling Services Office, Calgary.

Leonard Foundation Scholarships—The income of a trust created by the late Lieut.-Col. and Mrs. R. W. Leonard, St. Catharines, Ontario, will be expended in paying part of the college expenses of selected students at several institutions of Canada, including the University of Alberta, for from one to four years. The details of qualification and the procedure of application for these scholarships may be secured by corresponding with the trustees of the Leonard Foundation, the Canada Permanent Toronto General Trust Corporation, Toronto, Ontario, or with the Administrator of Student Awards of the University of Alberta. It is desirable that applications be filed in January as the last date for their receipt in Toronto is March 31 of each year.

Children of War Dead (Education Assistance) Act—This Act provides free and monthly allowances for children of veterans whose death was attributable to military service. Enquiries should be directed to the nearest district office of the Department of Veteran's Affairs.

R.C.A.F. Benevolent Fund—The Royal Canadian Air Force Benevolent Fund has made provision for loans for the benefit of former R.C.A.F. Personnel or their dependents.

For information apply to Mr. A. L. Robertson, P.O. Box 640, Federal Building, Edmonton, or Mr. W. B. Cheeseman, Department of Veterans Affairs, 810 - 3rd Street S.W., Calgary.

The P.E.O. Educational Loan Fund—This fund has been established by the P.E.O. Sisterhood for the purpose of assisting young women, properly and satisfactorily recommended and desiring to complete their higher education with a view to becoming self-supporting.

Loans are not made for a longer term than five years. They shall not exceed \$500.00 to any applicant for one year of study or \$1,000.00 for two or more years of study. The rate of interest is 3%. Since arrangements for loans require considerable time, applications should be placed as early as possible, preferably by August 1.

Further information concerning this loan fund may be secured from the Administrator of Student Awards, University of Alberta, Edmonton.:

UNIVERSITY OFFICER TRAINING UNITS

THE REGULAR OFFICER TRAINING PLAN

Introduction

The Regular Officer Training Plan (ROTP) is in operation in the Canadian Services Colleges and in Canadian universities. The plan is a form of mutual assistance to the armed forces and to young Canadians seeking advanced education.

Under ROTP, successful applicants who have completed senior matriculation are enrolled in the armed force of their choice, and are provided with university training. Students who are selected for the ROTP whilst attending university will be enrolled in the armed force of their choice while continuing their university studies.

Training in the ROTP is divided into two phases each year. Cadets will attend their university for the academic term and then will be sent to a unit of the forces in which they have been enrolled for summer practical training.

Academic Training

In general terms it can be stated that all courses which are applicable to business and industry are also applicable to the armed forces. Courses are, therefore, offered in the following broad patterns:

Engineering—Civil, Mechanical, Electrical, Aeronautical, Engineering Physics, Chemical.

Arts—General, Honors, Science.

Special Courses—Other specialist courses required by the armed forces. (If any course exceeds four years, the student will be accepted in his final four years.)

The greatest requirement is for technically qualified officers, so that the major proportion of selected candidates will be required to accept training in engineering and science faculties.

Conditions of Service

Successful applicants will be enrolled as Navel Cadets in the Royal Canadian Navy, Officer Cadets in the Canadian Army, and Flight Cadets in the Royal Canadian Air Force, according to their choice. They will attend the college or university selected. Undergraduates will complete the summer practical training program as do the reserve personnel of the appropriate university — Naval Training Division (RCN), Canadian Officers' Training Corps (Canadian Army), or University Reserve Training Plan (RCAF).

On successful completion of academic and military training, cadets will be promoted to commissioned officer rank in the regular force. *The privilege of release, if desired, will be granted after three years' commissioned officers service beyond graduation.*

Cadets are obliged to maintain good standing academically in college and throughout military training. A cadet who fails a year, or who lacks adequate standing in any subject of a previous year, loses his benefits. He may, on the recommendation of the faculty and the service concerned, be permitted to attend a year at his own expense and may, if successful, be reinstated.

OFFICER TRAINING UNITS

Financial Assistance

The cost of tuition and other essential fees will be borne by the Department of National Defence. The scale of pay and allowances for cadets under this plan is:

During the periods of attendance at university (academic year), cadets receive:

	Per month
Pay -----	\$ 63.00
Subsistence Allowance (where food and lodging is not provided) -----	65.00
TOTAL -----	\$ 128.00

During the period of practical summer training, cadets receive:

Pay ----- \$ 63.00
(Plus free rations, quarters and travel)

An allowance of \$75.00 per year is made for the purchase of books and instruments.

An allowance of \$75.00 per month is made during flying training to all RCAF aircrew trainees.

Free medical and dental care and annual leave with full pay and allowances will be received throughout the entire training period.

Admission Requirements

Applicants who possess the following qualifications will be considered for selection:

Citizenship—Canadian citizen; British subject resident in Canada, with status of land immigrant.

Marital Status—Must be single and remain so during academic training.

Medical—Must be fit for enrollment in the branch and service of his choice.

Age—Candidates must have reached sixteenth but not twenty-first birthday on January 1 of year of entry into University.

Education—Acceptance for entrance to the University of Alberta without condition.

Selection of Candidates

As future officers of the armed forces, applicants for the ROTP will appear before military interview boards for selection and will be assessed on their academic abilities, personality, character, appearance and leadership qualities.

How to Apply

Application should be made through the Officer Commanding the unit in which the applicant is interested. Offices for all three services are located on the Calgary Campus.

Medical Subsidization Plan

Scope

This plan applies to the three Armed Services. The plan provides for subsidization of medical students during the final three years of university and the interne year. Application may be made at any time after the commencement of the third from last academic year up to the end of the interne year.

Status

Applicants are enrolled in their initial year as an officer cadet (or equivalent). On successful completion of the first academic year under the plan, and the summer following the student is promoted to second Lieutenant (or equivalent).

Benefits

	As Officer Cadet	As Second Lieutenant	
		Single	Married
Pay of Rank -----	\$ 63 per mo.	\$225 per mon.	\$225 per mon.
Marriage Allowance -----			40 per mon.
Subsistence Allowance ---	65 per mon.	75 per mon.	110 per mon.
Totals -----	\$128 per mon.	\$300 per mon.	\$375 per mon.

In addition all fees are paid and the student receives a grant of \$75.00 for books and instruments.

Free medical and dental care and annual leave with pay are provided.

Promotion and Terms of Service

After internship and registration with a Provincial College of Physicians and Surgeons, the officer is promoted to the rank of Lieutenant, Captain or Flight Lieutenant and will be required to serve a period of full duty for 3 years as a commissioned officer.

Dental Corps Subsidization Plan

Dental undergraduates may apply for subsidization under this plan at any time after entering courses leading to the degree of Doctor of Dental Surgery, or upon being qualified to enter into a course, i.e.; applicants may not be enrolled until they are within 45 months of being qualified to receive a license to practice dentistry.

Status

An applicant accepted under this plan will be enrolled in the Canadian Army (Regular Force) in the Royal Canadian Dental Corps for a fixed term in the rank of Second Lieutenant if in his penultimate or final year of his course in dentistry or, if he has not yet entered his penultimate year, in the rank of Officer Cadet.

Benefits

	As Officer Cadet	As Second Lieutenant	
		Single	Married
Pay of Rank -----	\$ 63 per mon.	\$225 per mon.	\$225 per mon.
Marriage Allowance -----			40 per mon.
Subsistence Allowance --	\$ 65 per mon.	\$ 75 per mon.	\$110 per mon.
Totals -----	\$128 per mon.	\$300 per mon.	\$375 per mon.

In addition all fees are paid and the student receives a grant of \$75.00 for books.

Allowance will be made for the full cost of expendable instruments and supplies for the four years, as approved by the Faculty of Dentistry.

Free medical and dental care and annual leave with pay are provided.

OFFICER TRAINING UNITS

Promotion and Terms of Service

Upon successful completion of his course and obtaining his license to practice dentistry, a candidate under this plan will be promoted as a dental officer to the rank of Captain effective June 1st of that year, and shall serve thereafter for a fixed period of five years from the date of such promotion.

RESERVE OFFICER TRAINING PLAN

University Naval Training Division

The purpose of the University Naval Training Divisions is to select and train university students for commissioned rank in the Royal Canadian Navy (Reserve).

Admission Requirements--

- (a) The Candidates must be a Canadian citizen, or British subject resident in Canada with the status of a landed immigrant.
- (b) He must be medically fit, possess the required officer-like qualifications and have a sound academic record.
- (c) He must be 17 but not over 22 years of age prior to December 31 in the year of his enrollment in the UNTD.
- (d) He must be registered in the first or second year of university work.

Method of Enrollment

Students should apply for enrollment in the UNTD during the first 2 weeks of registration. An information centre is located on the campus during certain days of the week for registration. An officer is in attendance to assist all interested students.

Selection Boards

Students who join the UNTD are entered as probationary cadets on the Active List of the Royal Canadian Navy (Reserve) and during January of their first year appear before a Selection Board to determine their suitability for commissioned rank. Successful candidates are promoted to the rank of Cadet in the Royal Canadian Navy (Reserve).

Training Programme

- (a) During the academic year the UNTD training programme consists of one training night a week commencing in late September. The training is carried out through the media of lectures and instructional films and requires three winters to complete.
- (b) During the summer, Cadets must train a minimum of 17 weeks during their first two summers in ships and establishments of the Atlantic Command. The third summer training period is optional. Cadets may avail themselves of the opportunity to serve longer than 17 weeks each summer if they so desire.

Rates of Pay

- (a) During winter training Cadets may receive up to 16 days' pay for attendance on training nights or a maximum of one hundred and twenty dollars (\$120.00).
- (b) During the summer training, Cadets receive pay at the rate of \$225.00 per month plus transportation and traveling expenses. In addition, rations, quarters, and medical services are supplied.

General

- (a) Cadets are issued with all required uniforms.
- (b) When a Cadet has successfully completed three winters and two summers he will appear before a promotion board for his final assessment for commissioned rank. If he passes this board, he will be promoted to Sub-Lieutenant at the commencement of the next academic year.

For further information consult the R.C.N. Recruiting Officer, 608 Centre Street South, Calgary, Alberta.

CANADIAN OFFICERS TRAINING CORPS (University of Alberta Contingent)

The purpose of the Canadian Officers Training Corps programme is to provide a means whereby university undergraduates can qualify for appointments in the Canadian Army, Regular Force or Reserves as a commissioned officer.

The training programme, which covers a minimum of two years, consists of two portions, a theoretical part taken at the university during the academic year and a practical part taken during the summer at a Regular Force Army establishment. The theoretical phases at the university consists of 64 periods of instruction spread through the academic year. Candidates usually progress through three such phases in consecutive years. The practical portion taken during the summer at a school or unit of the Regular Army consists of 12 to 22 weeks of instruction with pay.

Eligibility

To enrol in the C.O.T.C. a student must be:

- (a) a Canadian citizen or British subject with landed immigrant certificate;
- (b) physically fit and between the ages of 17 and 33;
- (c) able to qualify as a second Lieutenant before graduation.

Some Corps of the Army will accept students from any faculty and up to the maximum age listed. In others there are certain limitations. For example the Corps of Royal Canadian Engineers and the Royal Canadian Electrical and Mechanical Engineers will only accept students registered in engineering. The Army Resident Staff Officer should be consulted for complete up-to-date information.

Female applicants in the first year Household Economics *only* may be enrolled in the Royal Canadian Army Medical Corps for training as Dietitians.

OFFICER TRAINING UNITS

Rank and Status

All candidates are enrolled as officer cadets. After successful completion of two theoretical and two practical phases of training officer cadets are commissioned in the rank of second lieutenants. On the completion of three theoretical and practical phases of training and attainment of a degree, second lieutenants are eligible for immediate appointment to the Regular Army or Militia in the rank of lieutenant.

Pay

During the summer training periods COTC officer cadets and second lieutenants receive \$225.00 pay each month. They are also provided with free room and board, uniforms and medical care. First class transportation to the place of summer training and return is provided free of charge.

During the winter training period, up to 16 days pay plus any additional amounts authorized may be earned.

Application and Enrolment

Students who are interested should apply as early as possible to the Army Resident Staff Officer. Applications may be accepted as late as January 15th.

ROYAL CANADIAN AIR FORCE (University Squadron)

Object

R.C.A.F. University Squadrons were formed at the major Canadian universities to promote a strong liaison and mutual understanding between the universities and the Royal Canadian Air Force. These squadrons will provide a flow of trained university graduates into the R.C.A.F. Regular or Reserve as commissioned officers.

Qualifications

Specific qualifications for enrolment in the University Reserve Training Plan are as follows:

- (a) Age. A male applicant must have reached his 16th but not his 26th birthday on date of application. A woman applicant must reach her 18th birthday prior to commencement of her first period of summer training. Applicants under 18 years of age must produce the written consent of a parent or guardian.
- (b) Medical category as established by the R.C.A.F.
- (c) Marital Status. A male applicant may be married or single. A woman applicant must be single.
- (d) Citizenship. An applicant must be a Canadian citizen, or a British subject permanently resident in Canada with the status of "landed immigrant."

Note: British subjects resident in Canada on a "student" or other visa are not eligible for enrolment.

Application

Application forms may be obtained at the Squadron Office. The selection of Flight Cadets for the University Squadron will commence at the beginning of the fall term and terminate January 31st.

Training Program

The three-year training program consists of formal training and supervised employment at R.C.A.F. schools and stations for a minimum of seventeen weeks and a maximum of twenty-two weeks each summer provided it can be completed during the period April 15 to September 15. In addition, Flight Cadet and Pilot Officer members of the squadron attend weekly lectures and parades during each of the three winter terms preceeding summer training.

Officer Development

During the first summer of training, all Flight Cadets undergo an initial Basic Officer Development Course at the R.C.A.F. Reserve Officers' School, in which they receive instruction in the duties, requirements and responsibilities of junior officers. This training involves the military, executive and development phases, which, besides the military and executive aspects of the R.C.A.F., are designed to train students as leaders who are well informed in world affairs and the role of Canada's defence forces in the current political and military situation, who are able to express themselves clearly and effectively, and who will make good officers and good citizens.

Formal Training

Most technical list and non-technical URTP Flight Cadets, on completion of the Basic Officer Development Course, proceed to R.C.A.F. schools to commence formal Air Force courses in their designated branches.

OFFICER TRAINING UNITS

Winter Training Program

During the academic year, members of the University Squadron attend weekly lectures on orientation, executive and officer development subjects. The first winter's lectures are preparatory to entry into URTP and the Air Force. Lectures given during the second and third winters extend and amplify knowledge acquired during the officer development phases of summer training. Emphasis is placed on the integration of social and military sciences and the determination of their application to current affairs.

Officer Employment

Flight Cadets in those branches for which formal courses are not given during the summer months are employed in an "understudy" capacity at various units. This employment, which commences at the Officer Development Course, provides the students with experience in Air Force Procedure and operation and allows them to observe the application of what they are taught at the Reserve Officers' School.

OFFICER TRAINING UNITS

Status

Accepted university students are appointed in the R.C.A.F. Primary Reserve (University list) in the rank of Flight Cadet.

Flight Cadets have the status of subordinate officers for all purposes and wear the rank of Pilot Officer.

After successful completion of three summers of training and subsequent graduation from university, Pilot Officers may be appointed to the R.C.A.F. Regular, Auxiliary or Supplementary Reserve in the rank of Flying Officer.

Pay

Flight Cadets are paid at the rates prevailing for Pilot Officer. Net earnings for each summer employed vary between \$750 and \$1,200, depending on the length of duty. Winter pay is according to attendance at lectures and parades and amounts to approximately \$100 if all sessions are attended.

Medical and dental care is provided during summer employment and first class rail transportation is issued on posting. Flight Cadets are issued with full kit of uniform for summer and winter wear upon acceptance.

For detailed information concerning Reserve University Squadron and R.C.A.F. (Regular), consult the Commanding Officer of the Squadron or the Resident Staff Officer (R.C.A.F.).

GRADUATE STUDIES AWARDS

THE FACULTY OF GRADUATE STUDIES

The awards listed in this section are only those which are tenable in the Faculty of Graduate Studies at Calgary. For a full list of Graduate Awards and also Graduate Awards made by Other Institutions refer to the calendar of the Faculty of Graduate Studies or to the Awards Calendar.

These Scholarship and Fellowships are awarded primarily on a basis of academic standing. In general, awards are made only to applicants whose previous academic standing is either First Class or high Second Class.

Unless otherwise stated, awards are for one year only, but application for renewal will be considered. No award will be made to other than a full-time student.

In order that awards may be equitably distributed, no student may hold more than one major award in a given year. A major award is defined generally as \$1,000.00 for 8 months or \$2,000.00 for 12 months for a student in first year graduate work and \$1,400.00 for 8 months or \$2,400.00 for 12 months in subsequent years.

Holders of major awards may not accept a teaching or other assignment involving more than the equivalent of four hours per week during the academic session or a total of 100 hours during a 12-months period. Holders of awards must pay regular tuition fees.

University of Alberta Graduate Fellowship—This is the senior fellowship within the Faculty and is valued at \$3,600 on a twelve-month basis. It is open to a student who has completed at least one year of graduate study and registers for a full-time program leading to either a Ph.D. and Ed.D. degree. An award winner is expected to carry out a full-time research program during the summer months. Tenure may begin at any time from May 1 to October 1.

Apply to Administrator of Student Awards by March 1.

The Harold Hayward Parlee Memorial Fellowship. This fellowship, offered by The Winspear Foundation in memory of H. H. Parlee, Chairman of the Board of Governors of the University of Alberta from 1940 to 1950, is valued at \$3,600 on a twelve-month basis, and is open to students who have completed at least one year of graduate work and register for a full-time program leading to either a Ph.D. or an Ed.D. degree. An award winner is expected to carry out a full-time research program during the summer months. Tenure may begin at any time from May 1 to October 1.

Apply to Administrator of Student Awards by March 1.

Province of Alberta Graduate Fellowships. Three Fellowships valued at \$3,600 each, on a twelve-month basis, are open to students who have completed at least one year of graduate study and register for a full-time program leading to either a Ph.D. or Ed.D. degree. Award winners are expected to carry out a full-time research program during the summer months. Tenure may begin at any time from May 1 to October 1.

Apply to Administrator of Student Awards by March 1.

GRADUATE STUDIES AWARDS

Province of Alberta Graduate Scholarships. Ten scholarships valued at \$2,600 or \$2,200 each on a twelve-month basis, are open to students in any year of graduate study. Normally awards of \$2,600 will be made only to students who have completed at least one year of graduate work. The usual award for students during the first year of graduate study will be \$2,200.

These scholarships are intended to encourage winners to do full-time research during the summer months but the twelve-month term of award is not obligatory. Tenure may begin at any time from May 1 to October 1, and may be terminated by either the student or the University at any time after the end of the academic year. In case the scholarship is held for less than twelve months, the amount will be reduced proportionately.

Apply to Administrator of Student Awards by March 1.

Province of Alberta Tuition Bursaries. Twenty-five bursaries, covering the total fee assessment for the year of the award, are open to students who carry a full program of studies for any year of graduate study. Financial need will be considered in awarding these bursaries. They may be held in conjunction with other scholarships and graduate assistantships. These bursaries will not be awarded to students whose total fee assessment is less than \$250.00.

Apply to the Administrator of Student Awards by August 10.

Graduate Teaching Assistantships are available in the Departments of most Faculties. Normal values for an eight month period range from \$2,000 to \$2,700. Limited travel grants will be paid to appointees coming 1,000 miles or more. Holders must pay regular Graduate Studies tuition fees. Additional intersession assistance is available in some Departments.

Apply to Head of Department concerned by March 1.

Graduate Research Assistantships are available in many of the Science Departments, particularly in the applied fields. These usually permit full-time graduate study programs. Normal values are \$1,940 for 12 months for the first year of graduate work and \$2,360 for subsequent years. Some are at other values for 8 or 12 months. Holders must pay regular Graduate Studies tuition fees.

Apply to Head of Department concerned by March 1.

The Francis F. Reeve Foundation Graduate Bursaries—The Francis F. Reeve Foundation offers three Graduate Bursaries valued at \$2,400 each on a twelve-month basis. The awards are open to graduates of any university who are engaged in, or admissible to, a program leading to a graduate degree at the University of Alberta in any field of study for which facilities are available, and will be made on the basis of scholastic attainment and financial need. Tenure may begin at any time from May 1 to October 1.

Apply to the Administrator of Student Awards by March 1.

The Francis F. Reeve Foundation Intersession Bursaries—Five bursaries of \$1,000 each are open to any students already engaged in a program leading to a graduate degree at the University of Alberta who are prepared to spend not less than four months of the Intersession on research. Holders of twelve-month awards are not eligible. Awards will be made on the basis of scholastic attainment and financial need. Tenure must begin not later than June 1. While any student may apply, preference will be given to those in the humanities, social sciences and education.

Apply to the Administrator of Student Awards by March 1.

The Friends of the University Intersession Scholarship of \$1,000 is open to any student already engaged in a program leading to a graduate degree at the University of Alberta who is prepared to spend not less than four months of the Intersession on research. Holders of twelve-month awards are not eligible. Tenure must begin not later than June 1. While any student may apply, preference will be given to those in the humanities, social sciences and education.

Apply to the Administrator of Student Awards by March 1.

The C.I.L. Fellowship—A fellowship of \$2,000.00 per year plus \$400.00 supplementary grant to the University is offered by Canadian Industries Limited for study and research leading to a doctorate degree in Chemistry or Chemical Engineering. The fellowship will be open to university graduates who are Canadian citizens or to university graduates who are intending to follow a career in Canada, with preference to Canadian citizens. Upon completion of the year's work, the fellow shall submit to Canadian Industries Limited a written report outlining work performed under the fellowship or alternatively a copy of the thesis prepared for his degree. Each award shall be in respect of one year, but, in the event that a fellow shows by his progress and application that such a course is desirable, the fellowship may be awarded to the same person for a further term of one year.

Apply to Administrator of Student Awards by March 1.

The Shell Oil Fellowship—An annual fellowship consisting of \$1,800.00 to the student selected and a grant of \$500 to the University, has been provided by the Shell Oil Company to sponsor research studies in Chemistry, Chemical Engineering, Mechanical Engineering, Petroleum Engineering, Geology, Physics, Geophysics or Oceanography leading to a postgraduate degree at the University of Alberta. The sum of \$1,200.00 will be paid towards the fellow's living expenses and fees for the normal academic year. In cases where the fellow may be occupied in his postgraduate work for a full calendar year, a further \$600.00 may be made available for the remaining four months. The fellowship is open annually to: (1) any science or engineering graduate of an approved Canadian university; or (2) any science or engineering graduate of an approved university outside of Canada who has had at least one year postgraduate study at a Canadian university. The applicant must make clear his intention to follow a career in Canada. In cases where the fellow is engaged in post-graduate studies leading to a Ph.D. degree, the fellowship may be awarded for a second year to the same person.

Apply to Administrator of Student Awards by March 1.

The Cities Service Fellowship of the value of \$2,000 is offered annually to a student in the Faculty of Graduate Studies of the University of Alberta. Preference will be given to students in Chemistry, Physical Chemistry, Civil Engineering, Chemical or Petroleum Engineering or other physical sciences but awards may be made in other fields of study.

In addition a grant of \$500 will be made to the University.

Apply to the Administrator of Student Awards by March 1.

The Delta Delta Delta Alumnae Fellowship of \$1,000.00 is offered annually by the Delta Delta Delta Alumnae of the University of Alberta, to a woman student of outstanding academic merit graduated from a degree program of the University of Alberta and proceeding in a full-time program towards a post-graduate degree either at this or any other accredited university. Preference will be given to a student in her first year of graduate work immediately following her undergraduate degree.

Apply to the Administrator of Student Awards by March 1.

GRADUATE STUDIES AWARDS

The Robert Tegler Graduate Scholarship of \$900.00 for work to be carried on at the University of Alberta is offered by the Robert Tegler Trust. This scholarship is open to graduates of the University of Alberta. The financial need of the candidate, together with other qualifications will be considered.

Apply to Administrator of Student Awards by March 1.

The Henry Marshall Tory Memorial Scholarship of \$300.00 is offered by the University of Alberta Alumni Association in honor of the first President of the University to promote graduate study and research in fields related to mental health. It is restricted to graduates of the University of Alberta and is tenable at the University of Alberta or at another approved graduate school.

Apply to Administrator of Student Awards by March 1.

The Pan American Petroleum Corporation Graduate Fellowship in Geology—A fellowship of the value of \$1,200 plus fees is offered by the Pan American Petroleum Corporation (formerly Stanolind Oil and Gas Company) for graduate study in the field of Geology at the University of Alberta. This fellowship is open to graduates of any Canadian University.

Apply to Administrator of Student Awards by March 1.

The California Standard Company Graduate Fellowship in Geology or Geophysics valued at \$1,000.00 is offered annually to a graduate of a recognized university to undertake first year graduate study in Geology, Geological Engineering, or Geophysics at the University of Alberta. Preference will be given to a male Canadian citizen. If no suitable candidate doing first year graduate study is available, consideration will be given to granting it to a student in other than first year. A supplementary grant-in-aid of \$500.00 will be made to the department in which the fellow is pursuing graduate study.

Apply to the Administrator of Student Awards by March 1.

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